# Ex parte Obiaya, 227 USPQ 58 (BdPatApp&Int 1985)

## Ex parte Obiaya

# (BdPatApp&Int) 227 USPQ 58

Opinion dated July 23, 1985
U.S. Patent and Trademark Office, Board of Patent Appeals and
Interferences

#### Headnotes

#### **PATENTS**

1. Patentability -- Invention -- In general (§ 51.501)

Inventor's recognition of another advantage that would flow naturally from following suggestion of prior art cannot be basis of patentability when differences would otherwise be obvious.

2. Double patenting -- In general (§ 33.1)

Reissue -- In general (§ 58.1)

Double patenting rejections are analogous to Section 103 rejections and depend on presence of prior "patent" as basis for rejection, and thus such rejection falls within ambit of those intended by reexamination statute.

Particular Patents -- Combustible Element

4,128,458, Obiaya, Combustible Element and Oxygen Concentration Sensor, Claims 1-13, rejected.

## Case History and Disposition:

Page 59

Appeal from Art Unit 112.

Reexamination No. 90/000,449, for No. 4,128,458, issued Dec. 5, 1978, based on application, Serial No. 845,049, filed Oct. 25, 1977. Rejection of Claims 1-13, sustained.

## Attorneys:

Stephen J. Schultz, for appellant.

## Judge:

Before Merker, Katz, and Pellman, Examiners-in-Chief.

## **Opinion Text**

## Opinion By:

Katz, Examiner-in-Chief.

This is a reexamination of Patent No. 4,128,458 and was requested by the defendant in an infringement suit brought by patentee.

This is an appeal from the final rejection of claims 1 through 14, which are all the claims in the case.

Claims 1 and 6 are illustrative of the appealed claims and read as follows:

- 1. A combustible fluid and oxygen concentration sensor comprising:
- a. a combustible concentration analyzer;
- b. an oxygen concentration analyzer,
- c. conduit means for routing a fluid sample past said combustible concentration analyzer and oxygen concentration analyzer;
  - d. an inlet port to said conduit means for receiving a sample fluid;
  - e. an outlet port from said conduit means for ejecting said sample after analysis;
- f. means for producing fluid flow in said conduit means from said inlet port to said outlet port;
  - g. means to correct the combustible concentration analyzer to an indicator; and
  - h. means to connect the oxygen analyzer to a second indicator;
  - i. said conduit means comprising:
    - i. first and second portions arranged to divide the flow into separate paths downstream from said inlet and upstream from said flow producing means;
    - ii. said first portion supplying the oxygen analyzer but not the combustible analyzer [sic, analyzer] with sample fluid;
    - iii. said second portion supplying the combustible analyzer but not the oxygen analyzer with sample fluid;
    - iv. a heater associated with said second portion upstream of said combustible analyzer; and
    - v. an inlet for providing air to said second portion upstream of said heater, to insure complete combustible analysis within said combustible analyzer.
  - 6. The combustible fluid and oxygen concentration analyzer of Claim 4 where said

oxygen concentration analyzer comprises:

- a. a reactor member:
- b. a heater element, configured in the form of a mesh structure, embedded within said reactor member; and
  - c. a base for mounting said reactor member;
  - d. said reactor member comprising:
    - i. an electrolyte with oxygen ion vacancies providing paths for oxygen ion conduction:
    - ii. a first and second conductive electrode for inducing a voltaic reaction within said source, and
      - iii. means for connecting said first and second conductive electrodes to external means for measuring the voltage difference created in said electrodes by said voltaic reaction.

The claimed invention relates to a sensor containing a combustion fluid and oxygen concentration analyzer in which a fluid sample is drawn into the sensor apparatus and separated into two parts, one part going to the oxygen analyzer and the other part going to the combustion analyzer. A heater is employed to maintain the sample going to the combustion analyzer at a constant temperature to obtain uniform results. An inlet is also provided such that air can be used to combust the materials going to the combustion anaylzer. The components of the oxygen anaylzer are set out in greater detail in claims 6 and 13.

The references relied on are:

Table set at this point is not available. See table in hard copy or call BNA PLUS at 1-800-452-7773 or 202-452-4323.

#### Page 60

"Product Specification E65-1, Oxygen and Combustibles Analyzer," 1956 "Bailey Product Instructions E65-6, Gas Analyzers Type OA, OB and OC", 1965

"Product Instructions E65-15, Heat Prover Combustion Analyzer", 1956 Bulletin P-23 of Thermox Instruments, Inc., 1976

Claims 1, 2, and 7 stand rejected under 35 U.S.C. 103 in view of the combination of OC Analyzer, Heat Prover or E65-1 in view of Ross et al. Claims 3, 4, 8 through 11 and 14 stand rejected for the same reasons and further in view of Yant et al., Lamb et al. or Cherry. Claim 7 stands rejected for the same reasons and further in view of Thermox. Claims 8 and 11 stand rejected under 35 U.S.C. § 103 in view of the combination of OC Analyzer, Heat Power or E65-1 taken with Ross et al., Thermox and Yant et al., Lamb et al. or Cherry. Claims 5 and 12 stand rejected under 35 U.S.C. § 103 over OC Analyzer, Heat Prover or E65-1 taken with Ross et al. and either Yant et al., Lamb et al. or Cherry and further in view of Fisher. Claims 6 and 13 stand rejected under the judicially-created doctrine of obvious type double patenting in view of the combination of the patented subject matter of claims 1 through 3, 6 and 7 of Obiaya taken with OC Analyzer, Heat Prover or E65-1 with Ross et al. and also either Yant et al., Lamb et al. or Cherry. Copyright 2003, The Bureau of National Affairs, Inc. Reproduction or redistribution, in whole or in part, and in any form, without express written permission, is prohibited except as permitted by the BNA Copyright Policy. http://www.bna.com/corp/index.html#V

We have carefully considered the arguments in this case and find that we agree with the examiner for the reasons set forth in the Answer. We adopt these reasons as our own and add the following only for purpose of emphasis.

In view of the fact that the examiner has answered each of the points made by appellant, it would be redundant to repeat these points. We will restrict our comments to the highlights of the appeal.

The main features of the claimed invention relate to the parallel flow of a divided sample to two different analyzers, a vacuum to draw the sample to the analyzers and then to exhaust, and a heater means upstream of a combustion analyzer. A number of the claims call for specific features, such as a labyrinth heater, a pressure regulator and the use of a specific combustion sensor.

We believe that the references clearly disclose each of the features in similar apparatus such that one skilled in this art having these references available would have found the claimed invention to be obvious. The examiner has established a prima facie case of obviousness. See In re Lintner, 458 F.2d 1013, 173 USPQ 560 (CCPA 1972) and In re Greenfield, 571 F.2d 1185, 197 USPQ 227 (CCPA 1978). A number of the references, exemplified by E65-1, disclose that it is well-known to divide a sample into separate parts and pass one part to an oxygen sensor and the other part to a combustion sensor, the parts then being recombined and exhausted. Ross et al. disclose that the art recognizes that samples may be aspirated or sucked into the system so as to pass through the sensor. A number of the references disclose labyrinth heaters, pressure regulators and, as set forth in the claims of the Obiaya patent, combustion analyzers of the type described in claims 6 and 13, now before us.

Appellant has pointed out the deficiencies in each of the references. However, the rejection is based on the combination of references. The test of obviousness under 35 U.S.C. §103 is not the express suggestion of the claimed invention in any or all of the references, but what the references taken collectively would suggest to those of ordinary skill in the art presumed to be familiar with them. Note *In Re* Rosselet, 347 F.2d 847, 146 USPQ 183 (CCPA 1965) and *In Re* Simon, 461 F.2d 1387, 174 USPQ 114 (CCPA 1972). We believe that one skilled in this art would have understood that the various features of the references could be combined to obtain the expected additive results.

[1] Appellant has presented evidence to indicate that a shorter response time is obtained when a labyrinth heater is employed, this being an unexpected result. However, the references disclosing labyrinth heaters indicate that the advantage obtained by using such heaters is that samples are maintained at a uniform temperature. The fact that appellant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. Note *In Re* Best, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and *In Re* Wilder, 429 F.2d 447, 166 USPQ 545 (CCPA 1970).

The examiner has rejected claims 6 and 13 on the judicially-created doctrine of double patenting of the obviousness type. The determination of whether the rejection is proper under the reexamination statute is a question of first impression. The Statute governing reexamination of patents is contained in 35 U.S.C. §301-307.

35 U.S.C. §301 contains the key language that:

"Any person at any time may cite to the Office in writing prior art consisting of

patents or printed publications." (emphasis added).

#### Page 61

Section 302 states that a request for reexamination by the Office of any claim of a patent may be:

"on the basis of any prior art cited under the provisions of Section 301."

(emphasis added).

However, Section 303(a) states that the Commissioner, on his own initiative, may initiate a reexamination procedure. <sup>1</sup> He may determine whether a substantial new question of patentability has been raised by the request with or without consideration of other patents or printed publications, as well as those cited pursuant to Section 301. We note that the words "prior art," used in Sections 301 and 302, do not appear in this Section.

The Statute refers to both patents and printed publications. Patents are printed as publications by most countries, <sup>2</sup> and if they are to be used only in such capacity then there would have been no reason for this redundancy. We must assume that Congress intended patents to also be the basis for rejection other than as a printed publication. Thus, patents may be used as evidence of prior inventorship by another or as evidence that the patentee of the reexamination patent has already obtained patent protection for his invention. The second patent would be barred by Section 101 if the inventions are identical or by the judicially-created doctrine of double patenting of the obviousness type, if there are only obvious differences between the claims of the respective patents.

However, Section 301 contains the limitation "prior art" to describe the patents and printed publications. Normally, "prior art" rejections exclude those based on public use or sale and those based on Section 112. <sup>3</sup>

[2] Where do "double patenting rejections of the obviousness type" fit in? Are they permissible under the reexamination statute, or are they, like public use and sale rejections, and Section 112 rejections (except as to new and amended claims), excluded? In re Etter, supra, states (225 USPQ at 4):

"Patent claims are reexamined only in light of patents and printed publications under 35 U.S.C. §§102, 103 . . . ."

Double patenting rejections are analogous to Section 103 rejections and depend on the presence of a prior "patent" as the basis for the rejection. Thus, we take the position that such rejection falls within the ambit of those intended by the statute and are not specifically excluded by the Etter case. Further, the Etter court focused on the question of presumption of validity with regard to a reexamination patent and its statement as to the scope of proper rejections in the evaluation of a reexamination patent are not the point of the ruling.

We now deal with the *merits* of the double patenting rejection. The rejection is based on the evidence that the general combination of oxygen and combustion analyzers used with sampling devices is known and that it would have been obvious to employ the particular oxygen analyzer defined in the claims of the Obiaya patent in combination with the sampling device. We believe that claims to such combination do not define a separate

and distinct invention from the claims to the oxygen analyzer.

Appellant has indicated that it would be futile to add a terminal disclaimer to this reexamination application since this application has a patent date which is earlier than that of the other Obiaya patent. It appears that appellant's choice is clear. He may acquiesce in the double patenting rejection or he may file a terminal disclaimer in his other patent, assuming that the Obiaya patent and the present application are commonly owned

The decision of the examiner is affirmed. *AFFIRMED*.

#### **Footnotes**

Footnote 1. Houston Atlas, Inc. v. Del Mar Scientific Inc., 217 USPQ 1032 at 1037 (DC NTex. 1982).

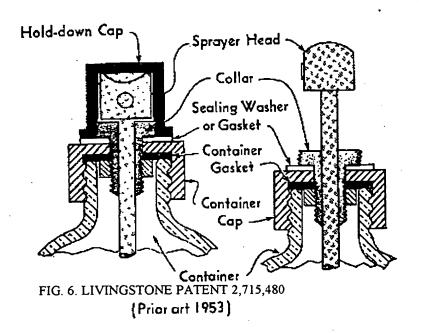
Footnote 2. Manual of Patent Examining Procedure, 4th Ed., Aug. 1983, page 900-5, Section 901.05D(b), Unprinted Foreign Patents.

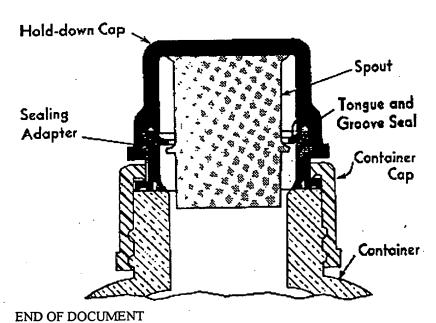
Footnote 3. In re Etter, 756 F.2d 852, 225 USPQ 1 (Fed. Cir. 1985) (at 4) states that "... only new or amended claims are also examined under 35 U.S.C. §§112 and 132, 37 CFR 1.552; MPEP §2258."

- End of Case -

**Intellectual Property Library** 

(Prior art 1938)





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Supreme Court of the United States

William T. GRAHAM et al., Petitioners,

JOHN DEERE COMPANY OF KANSAS CITY et al.

CALMAR, INC., Petitioner,

COOK CHEMICAL COMPANY. COLGATE-PALMOLIVE COMPANY, Petitioner,

v.
COOK CHEMICAL COMPANY.

Nos. 11, 37, 43.

Argued Oct. 14, 1965. Decided Feb. 21, 1966.

In a patent infringement action, the United States District Court for the Western District of Missouri, 216 F.Supp. 272, entered judgment for plaintiffs, and defendants appealed. The Court of Appeals, Eighth Circuit, reversed, 333 F.2d 529. In separate actions, plaintiffs sought declaration that patent was invalid and not infringed. The United States District Court for the Western District of Missouri, 220 F.Supp. 414, held that patent was valid and infringed and plaintiffs appealed. The Court of Appeals, Eighth Circuit, affirmed, 336 F.2d 110. Certiorari was granted in both cases. The Supreme Court, Mr. Justice Clark, held that provision of Patent Act pertaining to nonpatentability of invention because of obviousness was intended to codify judicial precedents embracing principle announced by Supreme Court as early as 1850, that while clear language of provision places emphasis on inquiry into obviousness general level of innovation necessary to sustain patentability remains the same, and that patents at issue were invalid because of obviousness of subject matter.

Judgment in patent infringement action affirmed; judgment in declaratory judgment actions reversed and remanded.

West Headnotes

[1] Patents 16(1) 291k16(1) Most Cited Cases (Formerly 291k16, 291k18)

Provision of Patent Act pertaining to nonpatentability

of invention because of obviousness was intended to codify judicial precedents embracing principle announced by Supreme Court as early as 1850; and while clear language of provision places emphasis on inquiry into obviousness, general level of innovation necessary to sustain patentability remains the same.

35 U.S.C.A. § 103.

### [2] Patents 2 291k2 Most Cited Cases

Federal patent power stems from specific constitutional provision which authorizes Congress to promote progress of useful arts by securing for limited times to inventors exclusive right to their discoveries. U.S.C.A.Const. art. 1, § 8.

## [3] Patents 3 291k3 Most Cited Cases

Patent clause of <u>Article I of Constitution</u> is both grant of power and limitation. U.S.C.A.Const. art. 1, § 8.

#### [4] Patents 3 291k3 Most Cited Cases

Patent clause of <u>Article I of Constitution</u> is limited to promotion of advances in useful arts. U.S.C.A.Const. art. 1, § 8.

## [5] Patents 2 291k2 Most Cited Cases

Congress in exercise of patent power may not overreach restraints imposed by stated constitutional purpose to promote advances in useful arts nor may it enlarge patent monopoly without regard to innovation, advancement, or social benefit gained thereby, nor may it authorize issuance of patents whose effects are to remove existent knowledge from public domain or to restrict free access to materials already available. U.S.C.A.Const. art. 1, § 8.

## [6] Patents 6(1) 291k16(1) Most Cited Cases (Formerly 291k16)

Innovation, advancement, and things which add to the sum of useful knowledge are inherent requisites in patent system which by constitutional command must promote progress of useful arts; such is the standard expressed in the Constitution and it may not be ignored. U.S.C.A.Const. art. 1, § 8.

[7] Patents 6.16(1) 291k16(1) Most Cited Cases (Formerly 291k16)

Patent validity requires reference to standard written into Constitution. U.S.C.A.Const. art. 1, § 8.

## [8] Patents 53 291k3 Most Cited Cases

Within limits of constitutional grant, Congress may implement stated purpose by selecting policy which in its judgment best effectuates constitutional aim. U.S.C.A.Const. art. 1, § 8.

## [9] Patents 53 291k3 Most Cited Cases

Congressional power to implement stated purpose of framers with respect to granting of patents by selecting policy which in its judgment best effectuates constitutional aim is but corollary to grant to Congress of any Article I power. U.S.C.A.Const. art. 1, § 8.

## [10] Patents 2 291k2 Most Cited Cases

Within scope established by Constitution, Congress may set out conditions and tests for patentability. U.S.C.A.Const. art. 1, § 8.

[11] Patents € 16(1) 291k16(1) Most Cited Cases (Formerly 291k16)

It is duty of commissioner of patents and of courts in administration of patent system to give effect to constitutional standard by appropriate application in each case of statutory scheme.

16.10(2)
291k16.10(2) Most Cited Cases
(Formerly 291k16.11)

Clause of Patent Act pertaining to nonpatentability of invention because of obviousness declaring "patentability shall not be negatived by the manner in which the invention was made" eliminated any requirement for a "flash of genius". 35 U.S.C.A. § 103.

[13] Patents 616(1) 291k16(1) Most Cited Cases (Formerly 291k16, 291k18)

Emphasis on nonobviousness in determining patentability is one of inquiry, not quality, and as such comports with constitutional strictures. 35 U.S.C.A. § 103; U.S.C.A. Const. art. 1, § 8.

[14] Patents 6 16.13 291k16.13 Most Cited Cases

Ultimate question of patent validity is one of law.

[15] Patents 62 16(2) 291k16(2) Most Cited Cases (Formerly 291k18)

Under Patent Act provision pertaining to nonobviousness as condition for patentability, scope and content of prior art are to be determined, differences between prior art and claims at issue are to be ascertained, and level of ordinary skill in pertinent art resolved; and against this background obviousness or nonobviousness of subject matter is determined. 35 U.S.C.A. § 103.

16 Patents 36.1(1) 291k36.1(1) Most Cited Cases (Formerly 291k18)

16] Patents 36.1(3) 291k36.1(3) Most Cited Cases (Formerly 291k16.7)

16 Patents 36.2(1)
291k36.2(1) Most Cited Cases
(Formerly 291k36(2))

Such secondary considerations as commercial success, long-felt but unsolved needs, and failure of others, might be utilized to give light to circumstances surrounding origin of subject matter sought to be patented as indicia of obviousness or nonobviousness. 35 U.S.C.A. § 103.

[17] Patents 328(2) 291k328(2) Most Cited Cases (Formerly 291k328)

2,627,798. Patent No. 2,627,798, relating to spring clamp which permitted plow shanks to be pushed upward when they struck obstructions in soil and to spring back into normal position when obstruction was passed over, was invalid because of obviousness of subject matter. 35 U.S.C.A. § 103.

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Invention is construed not only in light of claims but also with reference to file wrapper or prosecution history in patent office.

[19] Patents 6 168(2.2) 291k168(2.2) Most Cited Cases Cancellation.

(Formerly 291k168(21/4))

Claims as allowed must be read and interpreted with reference to rejected ones and to state of prior art, and claims that have been narrowed in order to obtain issuance of patent by distinguishing prior art cannot be sustained to cover that which was previously by limitation eliminated from patent.

[20] Patents — 168(2.2)
291k168(2.2) Most Cited Cases
Cancellation.
(Farmerly 201k168(21/4)

(Formerly 291k168(21/4))

Where patentee obtained patent only by accepting limitations imposed by patent examiner and claims were carefully drafted to reflect such limitations, broader view of invention could not thereafter be asserted.

121 Patents 328(2) 291k328(2) Most Cited Cases (Formerly 291k328)

2,870,943. Patent No. 2,870,943, relating to plastic finger sprayer with "hold down" lid used as built-in dispenser for containers or bottles packaging liquid products, principally household insecticides, was invalid because of obviousness of subject matter. 35 U.S.C.A. § 103.

# Patents 328(4) 291k328(4) Most Cited Cases

1,447,712, 2,844,290, 2,118,222, 2,119,884, 2,493,811, 2,586,687, 2,751,480. Cited. \*\*686 \*2 No. 11:

Orville O. Gold, Kansas City, Mo., for petitioners.

S. Tom Morris, Amarillo, Tex., for respondents.

Nos. 37, 43:

Dennis G. Lyons, Washington, D.C., for petitioners.

Gordon D. Schmidt, Kansas City, Mo., for respondent.

\*3 Mr. Justice CLARK delivered the opinion of the Court.

After a lapse of 15 years, the Court again focuses its attention on the patentability of inventions under the standard of Art. I, s 8, cl. 8, of the Constitution and under the conditions prescribed by the laws of the United States. Since our last expression on patent validity, Great A. & P. Tea Co. v. Supermarket Equipment Corp., 340 U.S. 147, 71 S.Ct. 127, 95 L.Ed. 162 (1950), the Congress has for the first time expressly added a third statutory dimension to the two requirements of novelty and utility that had been the sole statutory test since the Patent Act of 1793. This is the test of obviousness, i.e., whether 'the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.' s 103 of the Patent Act of 1952, 35 U.S.C. s 103 (1964 ed.).

[1] The questions, involved in each of the companion cases before us, are what effect the 1952 Act had upon traditional statutory and judicial tests of patentability and what definitive tests are now required. We have concluded that the 1952 Act was intended to codify judicial precedents embracing the principle long ago \*4 announced by this Court in Hotchkiss v. Greenwood, 11 How. 248, 13 L.Ed. 683 (1851), and that, while the clear language of s. 103 places emphasis on an inquiry into obviousness, the general \*\*687 level of innovation necessary to sustain patentability remains the same.

I.

The Cases.

(a). No. 11, Graham v. John Deere Co., an infringement suit by petitioners, presents a conflict between two Circuits over the validity of a single patent on a 'Clamp for vibrating Shank Plows.' The invention, a combination of old mechanical elements, involves a device designed to absorb shock from plow shanks as they plow through rocky soil and thus

to prevent damage to the plow. In 1955, the Fifth Circuit had held the patent valid under its rule that when a combination produces an 'old result in a cheaper and otherwise more advantageous way,' it is patentable. Jeoffroy Mfg., Inc. v. Graham, 219 F.2d 511, cert. denied, 350 U.S. 826, 76 S.Ct. 55, 100 L.Ed. 738. In 1964, the Eighth Circuit held, in the case at bar, that there was no new result in the patented combination and that the patent was, therefore, not valid. 333 F.2d 529, reversing D.C., 216 F.Supp. 272. We granted certiorari, 379 U.S. 956, 85 S.Ct. 652, 13 L.Ed.2d 553. Although we have determined that neither Circuit applied the correct test, we conclude that the patent is invalid under s 103 and, therefore, we affirm the judgment of the Eighth Circuit.

(b). No. 37, Calmar, Inc. v. Cook Chemical Co., and No. 43, Colgate-Palmolive Co. v. Cook Chemical Co., both from the Eighth Circuit, were separate declaratory judgment actions, but were filed contemporaneously. Petitioner in Calmar is the manufacturer of a finger-operated sprayer with a 'hold-down' cap of the type commonly seen on grocers' shelves inserted in bottles of insecticides and other liquids prior to shipment. Petitioner in Colgate-Palmolive is a purchaser of the sprayers and \*5 uses them in the distribution of its products. Each action of invalidity declaration sought noninfringement of a patent on similar sprayers issued to Cook Chemical as assignee of Baxter I. Scoggin, Jr., the inventor. By cross-action, Cook Chemical claimed infringement. The actions were consolidated for trial and the patent was sustained by the District Court. 220 F.Supp. 414. The Court of Appeals affirmed, 8 Cir., 336 F.2d 110, and we granted certiorari, 380 U.S. 949, 85 S.Ct. 1082, 13 L.Ed.2d 967. We reverse.

Manifestly, the validity of each of these patents turns on the facts. The basic problems, however, are the same in each case and require initially a discussion of the constitutional and statutory provisions covering the patentability of the inventions.

II.

[2][3][4][5][6][7] At the outset it must be remembered that the federal patent power stems from a specific constitutional provision which authorizes the Congress 'To promote the Progress of \* \* \* useful Arts, by securing for limited Times to \* \* \* Inventors the exclusive Right to their \* \* \* Discoveries.' Art. I, s 8, cl. 8. [FN1] The clause is both a grant of power and a limitation. This qualified authority, unlike the

power often exercised in the sixteenth and seventeenth centuries by the English Crown, is limited to the promotion of advances in the 'useful arts.' It was written against the backdrop of the practices--eventually curtailed by the Statute of Monopolies--of the Crown in granting monopolies to court favorites in goods or businesses which had long before been enjoyed by the public. See Meinhardt, Inventions, Patents and Monopoly, pp. \*\*688 30--35 (London, 1946). The Congress in the \*6 exercise of the patent power may not overreach the restraints imposed by the stated constitutional purpose. Nor may it enlarge the patent monopoly without regard to the innovation, advancement or social benefit gained thereby. Moreover, Congress may not authorize the issuance of patents whose effects are to remove existent knowledge from the public domain, or to restrict free access to materials already available. Innovation, advancement, and things which add to the sum of useful knowledge are inherent requisites in a patent system which by constitutional command must 'promote the Progress of \* \* \* useful Arts.' This is the standard expressed in the Constitution and it may not be ignored. And it is in this light that patent validity 'requires reference to a standard written into the Constitution.' Great A. & P. Tea Co. v. Supermarket Equipment Corp., supra, 340 U.S. at 154, 71 S.Ct. at 131 (concurring opinion).

FN1. The provision appears in the Constitution spliced together with the copyright provision, which we omit as not relevant here. See H.R.Rep.No.1923, 82d Cong., 2d Sess., at 4 (1952); DeWolf, An Outline of Copyright Law, p. 15 (Boston, 1925).

[8][9][10][11] Within the limits of the constitutional grant, the Congress may, of course, implement the stated purpose of the Framers by selecting the policy which in its judgment best effectuates the constitutional aim. This is but a corollary to the grant to Congress of any Article I power. Gibbons v. Ogden, 9 Wheat. 1, 6 L.Ed. 23. Within the scope established by the Constitution, Congress may set out conditions and tests for patentability. McClurg v. Kingsland, 1 How. 202, 206. 11 L.Ed. 102. It is the duty of the Commissioner of Patents and of the courts in the administration of the patent system to give effect to the constitutional standard by appropriate application, in each case, of the statutory scheme of the Congress.

Congress quickly responded to the bidding of the Constitution by enacting the Patent Act of 1790 during the second session of the First Congress. It created an agency in the Department of State headed by the Secretary of State, the Secretary of the Department of War \*7 and the Attorney General, any two of whom could issue a patent for a period not exceeding 14 years to any petitioner that 'hath \* \* \* invented or discovered any useful art, manufacture, \* \* \* or device, or any improvement therein not before known or used' if the board found that 'the invention or discovery (was) sufficiently useful and important \* \* \* ' 1 Stat. 110. This group, whose members administered the patent system along with their other public duties, was known by its own designation as 'Commissioners for the Promotion of Useful Arts.'

Thomas Jefferson, who as Secretary of State was a member of the group, was its moving spirit and might well be called the 'first administrator of our patent system.' See Federico, Operation of the Patent Act of 1790, 18 J.Pat.Off.Soc. 237, 238 (1936). He was not only an administrator of the patent system under the 1790 Act, but was also the author of the 1793 Patent Act. In addition, Jefferson was himself an inventor of great note. His unpatented improvements on plows, to mention but one line of his inventions, won acclaim and recognition on both sides of the Atlantic. Because of his active interest and influence in the early development of the patent system, Jefferson's views on the general nature of the limited patent monopoly under the Constitution, as well as his conclusions as to conditions for patentability under the statutory scheme, are worthy of note.

Jefferson, like other Americans, had an instinctive aversion to monopolies. It was a monopoly on tea that sparked the Revolution and Jefferson certainly did not favor an equivalent form of monopoly under the new government. His abhorrence of monopoly extended initially to patents as well. From France, he wrote to Madison (July 1788) urging a Bill of Rights provision restricting monopoly, and as against the argument that \*8 limited \*\*689 monopoly might serve to incite 'ingenuity,' he argued forcefully that 'the benefit even of limited monopolies is too doubtful to be opposed to that of their general suppression,' V Writings of Thomas Jefferson, at 47 (Ford ed., 1895).

His views ripened, however, and in another letter to Madison (Aug. 1789) after the drafting of the Bill of Rights, Jefferson stated that he would have been pleased by an express provision in this form:

'Art. 9. Monopolies may be allowed to persons for

their own productions in literature, & their own inventions in the arts, for a term not exceeding \_ \_ years, but for no longer term & no other purpose.' Id., at 113.

#### And he later wrote:

'Certainly an inventor ought to be allowed a right to the benefit of his invention for some certain time. \* \* \* Nobody wishes more than I do that ingenuity should receive a liberal encouragement.' Letter to Oliver Evans (May 1807), V Writings of Thomas Jefferson, at 75--76 (Washington ed.).

Jefferson's philosophy on the nature and purpose of the patent monopoly is expressed in a letter to Isaac McPherson (Aug. 1813), a portion of which we set out in the margin. [FN2] He rejected a natural-rights theory in \*9 intellectual property rights and clearly recognized the social and economic rationale of the patent system. The patent monopoly was not designed to secure to the inventor his natural right in his discoveries. Rather, it was a reward, an inducement, to bring forth new knowledge. The grant of an exclusive right to an invention was the creation of society--at odds with the inherent free nature of disclosed ideas--and was not to be freely given. Only inventions and discoveries which furthered human knowledge, and were new and useful, justified the special inducement of a limited private monopoly. Jefferson did not believe in granting patents for small details, obvious improvements, or frivolous devices. His writings evidence his insistence upon a high level of patentability.

> FN2. 'Stable ownership is the gift of social law, and is given late in the progress of society. It would be curious then, if an idea, the fugitive fermentation of an individual brain, could, of natural right, be claimed in exclusive and stable property. If nature has made any one thing less susceptible than all others of exclusive property, it is the action of the thinking power called an idea, which an individual may exclusively possess as long as he keeps it to himself, but the moment it is divulged, it forces itself into the possession of every one, and the receiver cannot dispossess himself of it. Its peculiar character, too, is that no one possesses the less, because every other possesses the whole of it. He who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me.

> That ideas should freely spread from one to another over the globe, for the moral and mutual instruction of man, and improvement of his condition, seems to have been peculiarly and benevolently designed by nature, when she made them, like fire, expansible over all space, without lessening their density in any point, and like the air in which we breathe, move, and have our physical being, incapable of confinement or exclusive appropriation. Inventions then cannot, in nature, be a subject of property. Society may give an exclusive right to the arising from them, as an encouragement to men to pursue ideas which may produce utility, but this may or may not be done, according to the will and convenience of the society, without claim or complaint from anybody.' VI Writings of Thomas Jefferson, at 180--181 (Washington ed.).

As a member of the patent board for several years, Jefferson saw clearly the difficulty in 'drawing a line between the things which are worth to the public the embarrassment of an exclusive patent, and those which are not.' The board on which he served sought to draw such a line and formulated several rules which \*\*690 are preserved in \*10 Jefferson's correspondence. [FN3] Despite the board's efforts, Jefferson saw 'with what slow progress a system of general rules could be matured.' Because of the 'abundance' of cases and the fact that the investigations occupied 'more time of the members of the board than they could spare from higher duties, the whole was turned over to the judiciary, to be matured into a system, under which every one might know when his actions were safe and lawful.' Letter to McPherson, supra, at 181, 182. Apparently Congress agreed with Jefferson and the board that the courts should develop additional conditions for patentability. Although the Patent Act was amended, revised or codified some 50 times between 1790 and 1950, Congress steered clear of a statutory set of requirements other than the bare novelty and utility tests reformulated in Jefferson's draft of the 1793 Patent Act.

FN3. '(A) machine of which we are possessed, might be applied by every man to any use of which it is susceptible.' Letter to Isaac McPherson, supra, at 181.

'(A) change of material should not give title

to a patent. As the making a ploughshare of cast rather than of wrought iron; a comb of iron instead of horn or of ivory \* \* \*.' Ibid.

'(A) mere change of form should give no right to a patent, as a high-quartered shoe instead of a low one; a round hat instead of a three-square; or a square bucket instead of a round one.' Id., at 181--182.

'(A combined use of old implements.) A man has a right to use a saw, an axe, a plane separately; may he not combine their uses on the same piece of wood?' Letter to Oliver Evans, (Jan. 1814), VI Writings of Thomas Jefferson, at 298 (Washington ed.).

III.

The difficulty of formulating conditions for patentability was heightened by the generality of the constitutional grant and the statutes implementing it, together with the underlying policy of the patent system that 'the things which are worth to the public the embarrassment \*11 of an exclusive patent,' as Jefferson put it, must outweigh the restrictive effect of the limited patent monopoly. The inherent problem was to develop some means of weeding out those inventions which would not be disclosed or devised but for the inducement of a patent.

This Court formulated a general condition of patentability in 1851 in Hotchkiss v. Greenwood, 11 How. 248, 13 L.Ed. 683. The patent involved a mere substitution of materials--porcelain or clay for wood or metal in doorknobs--and the Court condemned it, holding: [FN4]

FN4 In historical retrospect, the specific result in Hotchkiss flows directly from an application of one of the rules of the original board of 'Commissioners,' n. 3, second rule, supra.

'(U)nless more ingenuity and skill \* \* \* were required \* \* \* than were possessed by an ordinary mechanic acquainted with the business, there was an absence of that degree of skill and ingenuity which constitute essential elements of every invention. In other words, the improvement is the work of the skilful mechanic, not that of the inventor.' At p. 267.

Hotchkiss, by positing the condition that a patentable invention evidence more ingenuity and skill than that

possessed by an ordinary mechanic acquainted with the business, merely distinguished between new and useful innovations that were capable of sustaining a patent and those that were not. The Hotchkiss test laid the cornerstone of the judicial evolution suggested by Jefferson and left to the courts by Congress. The language in the case, and in those which followed, gave birth to 'invention' as a word of legal art signifying patentable inventions. Yet, as this Court has observed, '(t)he truth is, the word ('invention') cannot be defined in such manner as \*\*691 to afford any substantial aid in determining whether a particular device involves an exercise of the inventive faculty \*12 or not.' McClain v. Ortmayer, 141 U.S. 419, 427, 12 S.Ct. 76, 78, 35 L.Ed. 800 (1891); Great A. & P. Tea Co. v. Supermarket Equipment Corp., supra, 340 U.S., at 151, 71 S.Ct. at 129. Its use as a label brought about a large variety of opinions as to its meaning both in the Patent Office, in the courts, and at the bar. The Hotchkiss formulation, however, lies not in any label, but in its functional approach to questions of patentability. In practice, Hotchkiss has required a comparison between the subject matter of the patent, or patent application, and the background skill of the calling. It has been from this comparison that patentability was in each case determined.

IV.

The 1952 Patent Act.

The Act sets out the conditions of patentability in three sections. An analysis of the structure of these three sections indicates that patentability is dependent upon three explicit conditions: novelty and utility as articulated and defined in s 101 and s 102, and nonobviousness, the new statutory formulation, as set out in s 103. The first two sections, which trace closely the 1874 codification, express the 'new and useful' tests which have always existed in the statutory scheme and, for our purposes here, need no clarification. [FN5] The pivotal \*13 section around which the present controversy centers is s 103. It provides:

FN5. 's 101. Inventions patentable

'Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.'

's 102. Conditions for patentability; novelty and loss of right to patent

'A person shall be entitled to a patent unless-- '(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or

'(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or

'(c) he has abandoned the invention, or

'(d) the invention was first patented or caused to be patented by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application filed more than twelve months before the filing of the application in the United States,

'(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent,

'(f) he did not himself invent the subject matter sought to be patented, or

'(g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.'

The precursors of these sections are to be found in the Act of February 21, 1793, c. 11, 1 Stat. 318; Act of July 4, 1836, c. 357, 5 Stat. 117; Act of July 8, 1870, c. 230, 16 Stat. 198; Rev.Stat. s 4886 (1874).

's 103. Conditions for patentability; non-obvious subject matter

'A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention \*\*692 was made to a person having ordinary skill in the art to which said subject matter

pertains. Patentability shall not be negatived by the manner in which the invention was made.'

\*14 The section is cast in relatively unambiguous terms. Patentability is to depend, in addition to novelty and utility, upon the 'non-obvious' nature of the 'subject matter sought to be patented' to a person having ordinary skill in the pertinent art.

The first sentence of this section is strongly reminiscent of the language in Hotchkiss. Both formulations place emphasis on the pertinent art existing at the time the invention was made and both are implicitly tied to advances in that art. The major distinction is that Congress has emphasized 'nonobviousness' as the operative test of the section, rather than the less definite 'invention' language of Hotchkiss that Congress thought had led to 'a large variety' of expressions in decisions and writings. In the title itself the Congress used the phrase 'Conditions for patentability; non-obvious subject matter' (italics added), thus focusing upon 'nonobviousness' rather than 'invention.' [FN6] The Senate and House Reports, S.Rep. No. 1979, 82d Cong., 2d Sess. (1952); H.R.Rep. No. 1923, 82d Cong., 2d Sess. (1952), U.S.Code Congressional and Administrative News 1952, p. 2394, reflect this emphasis in these terms:

FN6. The corresponding provision in the preliminary draft was titled 'Conditions for patentability, lack of invention' (italics added), Proposed Revision and Amendment of the Patent Laws, Preliminary Draft with Notes, House Committee on the Judiciary (Committee Print, 1950).

'Section 103, for the first time in our statute, provides a condition which exists in the law and has existed for more than 100 years, but only by reason of decisions of the courts. An invention which has been made, and which is new in the sense that the same thing has not been made before, may still not be patentable if the difference between the new thing and what was known before is not considered sufficiently great to warrant a patent. That has been expressed in a large variety of ways in decisions of \*15 the courts and in writings. Section 103 states this requirement in the title. It refers to the difference between the subject matter sought to be patented and the prior art, meaning what was known before as described in section 102. If this difference is such that the subject matter as a whole would have been obvious

at the time to a person skilled in the art, then the subject matter cannot be patented.

That provision paraphrases language which has often been used in decisions of the courts, and the section is added to the statute for uniformity and definiteness. This section should have a stabilizing effect and minimize great departures which have appeared in some cases.' H.R.Rep., supra, at 7; S.Rep., supra, at 6.

[12] It is undisputed that this section was, for the first time, a statutory expression of an additional requirement for patentability, originally expressed in Hotchkiss. It also seems apparent that Congress intended by the last sentence of s 103 to abolish the test it believed this Court announced in the controversial phrase 'flash of creative genius,' used in Cuno Engineering Corp. v. Automatic Devices Corp., 314 U.S. 84, 62 S.Ct. 37, 86 L.Ed. 58 (1941). [FN7]

FN7. The sentence in which the phrase occurs reads: '(T)he new device, however useful it may be, must reveal the flash of creative genius not merely the skill of the calling.' At p. 91, 62 S.Ct. at p. 41. Although some writers and lower courts found in the language connotations as to the frame of mind of the inventors, none Hotchkiss specifically, and the reference to 'flash of creative genius' was but a rhetorical embellishment of language going back to 1833. Cf. 'exercise of genius,' Shaw v. Cooper, 7 Pet. 292, 8 L.Ed. 689; 'inventive genius,' Reckendorfer v. Faber, 92 U.S. 347, 23 L.Ed. 719 (1876); Concrete Appliance Co. v. Gomery, 269 U.S. 177, 46 S.Ct. 42, 70 L.Ed. 222; 'flash of thought,' Densmore v. Scofield, 102 U.S. 375, 26 L.Ed. 214 (1880); 'intuitive genius,' Potts v. Creager, 155 U.S. 597, 15 S.Ct. 194, 39 L.Ed. 275 (1895). Rather than establishing a more exacting standard, Cuno merely rhetorically restated the requirement that the subject matter sought to be patented must be beyond the skill of the calling. It was the device, not the invention, that had to reveal the 'flash of creative genius.' See Boyajian, The Flash of Alternative An Creative Genius, Interpretation, 25 J.Pat.Off.Soc. 776, 780, 781 (1943); Pacific Contact Laboratories, Inc. v. Solex Laboratories, Inc., 9 Cir., 209 F.2d 529, 533; Brown & Sharpe Mfg. Co. v. Kar Engineering Co., 1 Cir., 154 F.2d 48, 51--52; In re Shortell, 142 F.2d 292, 295--

296, 31 CCPA (Pat.) 1062, 1069.

\*\*693 \*16 It is contended, however, by some of the parties and by several of the amici that the first sentence of s 103 was intended to sweep away judicial precedents and to lower the level of patentability. Others contend that the Congress intended to codify the essential purpose reflected in existing judicial precedents—the rejection of insignificant variations and innovations of a commonplace sort—and also to focus inquiries under s 103 upon nonobviousness, rather than upon 'invention,' as a means of achieving more stability and predictability in determining patentability and validity.

The Reviser's Note to this section, [FN8] with apparent reference to Hotchkiss, recognizes that judicial requirements as to 'lack of patentable novelty (have) been followed since at least as early as 1850.' The note indicates that the section was inserted because it 'may have some stabilizing effect, and also to serve as a basis for the addition at a later time of some criteria which may be worked out.' To this same effect are the reports of both Houses, supra, which state that the first sentence \*17 of the section 'paraphrases language which has often been used in decisions of the courts, and the section is added to the statute for uniformity and definiteness.'

FN8. There is no provision corresponding to the first sentence explicitly stated in the present statutes, but the refusal of patents by the Patent Office, and the holding of patents invalid by the courts, on the ground of lack of invention or lack of patentable novelty has been followed since at least as early as 1850. This paragraph is added with the view that an explicit statement in the statute may have some stabilizing effect, and also to serve as a basis for the addition at a later time of some criteria which may be worked out

'The second sentence states that patentability as to this requirement is not to be negatived by the manner in which the invention was made, that is, it is immaterial whether it resulted from long toil and experimentation or from a flash of genius.'

We believe that this legislative history, as well as other sources, [FN9] shows that the revision was not

intended by Congress to change the general level of patentable invention. We conclude that the section was intended merely as a codification of judicial precedents embracing the Hotchkiss condition, with congressional directions that inquiries into the obviousness of the subject matter sought to be patented are a prerequisite to patentability.

FN9. See Efforts to Establish a Statutory Standard of Invention, Study No. 7, Senate Subcommittee on Patents, Trademarks, and Copyrights, 85th Cong., 1st Sess. (Committee Print, 1958); Hearings, Subcommittee No. 3, House Committee on the Judiciary, on H.R. 3760, 82d Cong., 1st Sess. (1951).

V.

[13] Approached in this light, the <u>s 103</u> additional condition, when followed realistically, will permit a more practical test of patentability. The emphasis on non-obviousness is one of inquiry, not \*\*694 quality, and, as such, comports with the constitutional strictures.

[14][15][16] While the ultimate question of patent validity is one of law, Great A. & P. Tea Co. v. Supermarket Equipment Corp., supra, 340 U.S. at 155, 71 S.Ct. at 131, the s 103 condition, which is but one of three conditions, each of which must be satisfied, lends itself to several basic factual inquiries. Under s 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances \*18 surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may Subtests of Note, See relevancy. 'Nonobviousness': A Nontechnical Approach to Patent Validity, 112 U.Pa.L.Rev. 1169 (1964).

This is not to say, however, that there will not be difficulties in applying the nonobviousness test. What is obvious is not a question upon which there is likely to be uniformity of thought in every given factual context. The difficulties, however, are comparable to

those encountered daily by the courts in such frames of reference as negligence and scienter, and should be amenable to a case-by-case development. We believe that strict observance of the requirements laid down here will result in that uniformity and definiteness which Congress called for in the 1952 Act.

. While we have focused attention on the appropriate standard to be applied by the courts, it must be remembered that the primary responsibility for sifting out unpatentable material lies in the Patent Office. To await litigation is-- for all practical purposes--to debilitate the patent system. We have observed a notorious difference betweenthe standards applied by the Patent Office and by the courts. While many reasons can be adduced to explain the discrepancy, one may well be the free rein often exercised by Examiners in their use of the concept of 'invention.' In this connection we note that the Patent Office is confronted with a most difficult task. Almost 100,000 applications for patents are filed each year. Of these, about 50,000 are granted and the backlog now runs well over 200,000. 1965 Annual Report of the Commission of Patents 13--14. This is itself a compelling reason for the Commissioner to strictly adhere to the 1952 Act as interpreted here. This would, we believe, not only expedite disposition but \*19 bring about a closer concurrence between administrative and judicial precedent. [FN10]

FN10. The President has appointed a Commission on the Patent System. Executive Order No. 11215, 30 Fed.Reg. 4661 (April 10, 1965). It is hoped that its studies may develop more efficient administrative procedures and techniques that will further expedite dispositions and at the same time insure the strict application of appropriate tests of patentability.

Although we conclude here that the inquiry which the Patent Office and the courts must make as to patentability must be beamed with greater intensity on the requirements of  $\underline{s}$  103, it bears repeating that we find no change in the general strictness with which the overall test is to be applied. We have been urged to find in  $\underline{s}$  103 a relaxed standard, supposedly a congressional reaction to the 'increased standard' applied by this Court in its decisions over the last 20 or 30 years. The standard has remained invariable in this Court. Technology, however, has advanced—and with remarkable rapidity in the last 50 years. Moreover, the ambit of applicable art in given fields

of science has widened by \*\*695 disciplines unheard of a half century ago. It is but an evenhanded application to require that those persons granted the benefit of a patent monopoly be charged with an awareness of these changed conditions. The same is true of the less technical, but still useful arts. He who seeks to build a better mousetrap today has a long path to tread before reaching the Patent Office.

VI.

We now turn to the application of the conditions found necessary for patentability to the cases involved here:

A. The Patent in Issue in No. 11, Graham v. John Deere Co.

This patent, No. 2,627,798 (hereinafter called the '798 patent) relates to a spring clamp which permits plow shanks to be pushed upward when they hit obstructions \*20 in the soil, and then springs the shanks back into normal position when the obstruction is passed over. The device, which we show diagrammatically in the accompanying sketches (Appendix, Fig. 1), is fixed to the plow frame as a unit. The mechanism around which the controversy center is basically a hinge. The top half of it, known as the upper plate (marked 1 in the sketches), is a heavy metal piece clamped to the plow frame (2) and is stationary relative to the plow frame. The lower half of the hinge, known as the hinge plate (3), is connected to the rear of the upper plate by a hinge pin (4) and rotates downward with respect to it. The shank (5), which is bolted to the forward end of the hinge plate (at 6), runs beneath the plate and parallel to it for about nine inches, passes through a stirrup (7), and then continues backward for several feet curving down toward the ground. The chisel (8), which does the actual plowing, is attached to the rear end of the shank. As the plow frame is pulled forward, the chisel rips through the soil, thereby plowing it. In the normal position, the hinge plate and the shank are kept tight against the upper plate by a spring (9), which is atop the upper plate. A rod (10) runs through the center of the spring, extending down through holes in both plates and the shank. Its upper end is bolted to the top of the spring while its lower end is hooked against the underside of the shank.

When the chisel hits a rock or other obstruction in the soil, the obstruction forces the chisel and the rear portion of the shank to move upward. The shank is pivoted (at 11) against the rear of the hinge plate and pries open the hinge against the closing tendency of

the spring. (See sketch labeled 'Open Position,' Appendix, Fig. 1.) This closing tendency is caused by the fact that, as the hinge is opened, the connecting rod is pulled downward and the spring is compressed. When the obstruction \*21 is passed over, the upward force on the chisel disappears and the spring pulls the shank and hinge plate back into their original position. The lower, rear portion of the hinge plate is constructed in the form of a stirrup (7) which brackets the shank, passing around and beneath it. The shank fits loosely into the stirrup (permitting a slight up and down play). The stirrup is designed to prevent the shank from recoiling away from the hinge plate, and thus prevents excessive strain on the shank near its bolted connection. The stirrup also girds the shank, preventing it from fishtailing from side to side.

In practical use, a number of spring-hinge-shank combinations are clamped to a plow frame, forming a set of ground-working chisels capable of withstanding the shock of rocks and other obstructions in the soil without breaking the shanks.

#### Background of the Patent.

Chisel plows, as they are called, were developed for plowing in areas where the ground is relatively free from rocks or \*\*696 stones. Originally, the shanks were rigidly attached to the plow frames. When such plows were used in the rocky, glacial soils of some of the Northern States, they were found to have serious defects. As the chisels hit buried rocks, a vibratory motion was set up and tremendous forces were transmitted to the shank near its connection to the frame. The shanks would break. Graham, one of the petitioners, sought to meet that problem, and in 1950 obtained a patent, U.S. No. 2,493,811 (hereinafter '811), on a spring clamp where solved some of the difficulties. Graham and his companies manufactured and sold the '811 clamps. In 1950, Graham modified the '811 structure and filed for a patent. That patent, the one in issue, was granted in 1953. This suit against competing plow manufacturers resulted from charges by petitioners that several of respondents' devices infringed the '798 patent.

#### \*22 The Prior Art.

Five prior patents indicating the state of the art were cited by the Patent Office in the prosecution of the '798 application. Four of these patents, 10 other United States patents and two prior-use spring-clamp arrangements not of record in the '798 file wrapper were relied upon by respondents as revealing the

prior art. The District Court and the Court of Appeals found that the prior art 'as a whole in one form or another contains all of the mechanical elements of the 798 Patent.' One of the prior-use clamp devices not before the Patent Examiner--Glencoe--was found to have 'all of the elements.'

We confine our discussion to the prior patent of Graham, '811, and to the Glencoe clamp device, both among the references asserted by respondents. The Graham '811 and '798 patent devices are similar in all elements, save two: (1) the stirrup and the bolted connection of the shank to the hinge plate do not appear in '811; and (2) the position of the shank is reversed, being placed in patent '811 above the hinge plate, sandwiched between it and the upper plate. The shank is held in place by the spring rod which is hooked against the bottom of the hinge plate passing through a slot in the shank. Other differences are of no consequence to our examination. In practice the '811 patent arrangement permitted the shank to wobble or fishtail because it was not rigidly fixed to the hinge plate; moreover, as the hinge plate was below the shank, the latter caused wear on the upper plate, a member difficult to repair or replace.

Graham's '798 patent application contained 12 claims. All were rejected as not distinguished from the Graham '811 patent. The inverted position of the shank was specifically rejected as was the bolting of the shank to the hinge plate. The Patent Office examiner found these to be 'matters of design well within the expected skill of \*23 the art and devoid of invention.' Graham withdrew the original claims and substituted the two new ones which are substantially those in issue here. His contention was that wear was reduced in patent '798 between the shank and the heel or rear of the upper plate. [FN11] He also emphasized several new features, the relevant one here being that the bolt used to connect the hinge plate and shank maintained the upper face of the shank in continuing \*\*697 and constant contact with the underface of the hinge plate.

FN11. In '811, where the shank was above the hinge plate, an upward movement of the chisel forced the shank up against the underside of the rear of the upper plate. The upper plate thus provided the fulcrum about which the hinge was pried open. Because of this, as well as the location of the hinge pin, the shank rubbed against the heel of the upper plate causing wear both to the plate and to the shank. By relocating the hinge pin

> and by placing the hinge plate between the shank and the upper plate, as in '798, the rubbing was eliminated and he wear point was changed to the hinge plate, a member more easily removed or replaced for repair.

Graham did not urge before the Patent Office the greater 'flexing' qualities of the '798 patent arrangement which he so heavily relied on in the courts. The sole element in patent '798 which petitioners argue before us is the interchanging of the shank and hinge plate and the consequences flowing from this arrangement. The contention is that this arrangement--which petitioners claim is not disclosed in the prior art--permits the shank to flex under stress for its entire length. As we have sketched (see sketch, 'Graham '798 Patent' in Appendix, Fig. 2), when the chisel hits an obstruction the resultant force (A) pushes the rear of the shank upward and the shank pivots against the rear of the hinge plate at (C). The natural tendency is for that portion of the shank between the pivot point and the bolted connection (i.e., between C and D) to bow downward and away from the hinge plate. The maximum distance (\*24 B) that the shank moves away from the plate is slight-for emphasis, greatly exaggerated in the sketches. This is so because of the strength of the shank and the short--nine inches or so--length of that portion of the shank between (C) and (D). On the contrary, in patent '811 (see sketch, 'Graham '811 Patent' in Appendix, Fig. 2), the pivot point is the upper plate at point (c); and while the tendency for the shank to bow between points (c) and (d) is the same as in '798, the shank is restricted because of the underlying hinge plate and cannot flex as freely. In practical effect, the shank flexes only between points (a) and (c), and not along the entire length of the shank, as in '798. Petitioners say that this difference in flex, though small, effectively absorbs the tremendous forces of the shock of obstructions whereas prior art arrangements failed.

The Obviousness of the Differences.

[17] We cannot agree with petitioners. We assume that the prior art does not disclose such an arrangement as petitioners claim in patent '798. Still we do not believe that the argument on which petitioners' contention is bottomed supports the validity of the patent. The tendency of the shank to flex is the same in all cases. If free-flexing, as petitioners now argue, is the crucial difference above the prior art, then it appears evident that the desired result would be obtainable by not boxing the shank

within the confines of the hinge. [FN12] The only other effective place available in the arrangement was to attach it below the hinge plate and run it through a \*25 stirrup or bracket that would not disturb its flexing qualities. Certainly a person having ordinary skill in the prior art, given the fact that the flex in the shank could be utilized more effectively if allowed to run the entire length of the shank, would immediately see that the thing to do was what Graham did, i.e., invert the shank and the hinge plate.

FN12. Even petitioners' expert testified to that effect:

'Q. Given the same length of the forward portion of the clamp \* \* \* you would anticipate that the magnitude of flex (in '798) would be precisely the same or substantially the same as in 811, wouldn't you?

'A. I would think so.'

Petitioners' argument basing validity on the free-flex theory raised for the first time on appeal is reminiscent of Lincoln Engineering Co. of Illinois v. Stewart-Warner Corp., 303 U.S. 545, 58 S.Ct. 662, 82 L.Ed. 1008 (1938), where the Court called such an effort 'an afterthought. No such function \* \* \* is hinted at in the specifications of the patent. If this were so vital an element in the functioning of the apparatus, it is strange that all mention of it was omitted.' At p. 550, 58 S.Ct. at p. 665. No 'flexing' argument \*\*698 was raised in the Patent Office. Indeed, the trial judge specifically found that 'flexing is not a claim of the patent in suit \* \* \* and would not permit interrogation as to flexing in the accused devices. Moreover, the clear testimony of petitioners' experts shows that the flexing advantages flowing from the '798 arrangement are not, in fact, a significant feature in the patent. [FN13]

FN13. 'Q. \* \* \* Do you regard the small degree of flex in the forward end of the shank that lies between the pivot point and the point of spring attachment to be of any significance or any importance to the functioning of a device such as 798? A. Unless you are approaching the elastic limit, I think this flexing will reduce the maximum stress at the point of pivot there, where the maximum stress does occur. I think it will reduce that. I don't know how much.

'Q. Do you think it is a substantial factor, a

factor of importance in the functioning of the structure? A. Not a great factor, no.'

The same expert previously testified similarly in <u>Jeoffoy Mfg., Inc. v. Graham, 219 F.2d 511</u>.

; find no nonobvious facets in the ingement. The wear and repair claims were icient to overcome \*26 the patent examiner's ginal conclusions as to the validity of the patent. vever, some of the prior art, notably Glencoe, was before him. There the hinge plate is below the nk but, as the courts below found, all of the nents in the '798 patent are present in the Glencoe cture. Furthermore, even though the position of shank and hinge plate appears reversed in ncoe, the mechanical operation is identical. The nk there pivots about the underside of the stirrup, ch in Glencoe is above the shank. In other words, stirrup in Glencoe serves exactly the same ction as the heel of the hinge plate in '798. The e shifting of the wear point to the heel of the '798 ge plate from the stirrup of Glencoe--itself a part he hinge plate--presents no operative mechanical inctions, much less nonobvious differences.

The Patent in Issue in No. 37, Calmar, Inc. v. ok Chemical Co., and in No. 43, Colgate-molive Co. v. Cook Chemical Co.

e single patent [FN14] involved in these cases ites to a plastic finger sprayer with a 'hold-down' used as a built-in dispenser for containers or tles packaging liquid products, principally isehold insecticides. Only the first two of the four ims in the patent are involved here and we, refore, limit our discussion to them. We do not set those claims here since they are printed in 220 jupp., at 417-418.

FN14. The patent is U.S. No. 2,870,943 issued in 1959 to Cook Chemical Co. as assignee of Baxter I. Scoggin, Jr., the inventor. In No. 37, Calmar is the manufacturer of an alleged infringing device, and, in No. 43, Colgate is a customer of Calmar and user of its device.

essence the device here combines a fingererated pump sprayer, mounted in a container or ttle by means of a container cap, with a plastic ercap which screws over the top of and depresses the sprayer (see Appendix, \*27 Fig. 3). The pump sprayer passes through the container cap and extends down into the liquid in the container, the overcap fits over the pump sprayer and screws down on the outside of a collar mounting or retainer which is molded around the body of the sprayer. When the overcap is screwed down on this collar mounting a seal is formed by the engagement of a circular ridge or rib located above the threads on the collar mounting with a mating shoulder located inside the overcap above its threads. [FN15] The overcap, as it is screwed down, depresses the pump plunger rendering the pump inoperable and when the seal is effected, \*\*699 any liquid which might seep into the overcap through or around the pump is prevented from leaking out of the overcap. The overcap serves also to protect the sprayer head and prevent damage to it during shipment or merchandising. When the overcap is in place it does not reach the cap of the container or bottle and in no way engages it since a slight space is left between those two pieces.

FN15. Our discussion here relates to the overcap seal. The container itself is sealed in the customary way through the use of a container gasket located between the container and the container cap.

The device, called a shipper-sprayer in the industry, is sold as an integrated unit with the overcap in place enabling the insecticide manufacturer to install it on the container or bottle of liquid in a single operation in an automated bottling process. The ultimate consumer simply unscrews and discards the overcap, the pump plunger springs up and the sprayer is ready for use.

The Background of the Patent.

For many years manufacturers engaged in the insecticide business had faced a serious problem in developing sprayers that could be integrated with the containers or bottles in which the insecticides were marketed. Originally, insecticides were applied through the use of tin \*28 sprayers, not supplied by the manufacturer. In 1947, Cook Chemical, an insecticide manufacturer, began to furnish its customers with plastic pump dispensers purchased from Calmar. The dispenser was an unpatented finger-operated device mounted in a perforated cardboard holder and hung over the neck of the bottle or container. It was necessary for the ultimate consumer to remove the cap of the container and

insert and attach the sprayer to the latter for use.

Hanging the sprayer on the side of the container or bottle was both expensive and troublesome. Packaging for shipment had to be a hand operation, and breakage and pilferage as well as the loss of the sprayer during shipment and retail display often occurred. Cook Chemical urged Calmar to develop an integrated sprayer that could be mounted directly in a container or bottle during the automated filling process and that would not leak during shipment or retail handling. Calmar did develop some such devices but for various reasons they were not completely successful. The situation was aggravated in 1954 by the entry of Colgate-Palmolive into the insecticide trade with its product marketed in aerosol spray cans. These containers, which used compressed gas as a propellent to dispense the liquid, did not require pump sprayers.

During the same year Calmar was acquired by the Drackett Company. Cook Chemical became apprehensive of its source of supply for pump sprayers and decided to manufacture its own through a subsidiary, Bakan Plastics, Inc. Initially, it copied its design from the unpatented Calmar sprayer, but an officer of Cook Chemical, Scoggin, was assigned to develop a more efficient device. By 1956 Scoggin had perfected the shipper-sprayer in suit and a patent was granted in 1959 to Cook Chemical as his assignee. In the interim Cook Chemical began to use Scoggin's device and also marketed \*29 it to the trade. The device was well received and soon became widely used.

In the meanwhile, Calmar employed two engineers, Corsette and Cooprider, to perfect a shipper-sprayer and by 1958 it began to market its SS--40, a device very much similar to Scoggin's. When the Scoggin patent issued, Cook Chemical charged Calmar's SS--40 with infringement and this suit followed.

The Opinions of the District Court and the Court of Appeals.

At the outset it is well to point up that the parties have always disagreed as to the scope and definition of the invention claimed in the patent in suit. Cook Chemical contends that the invention encompasses a unique combination of admittedly old elements and that patentability is found in the result produced. Its expert testified that the invention was 'the first commercially successful, inexpensive integrated shipping closure pump unit which permitted automated assembly with a container of household

\*\*700 insecticide or similar liquids to produce a practical, ready-to-use package which could be shipped without external leakage and which was so organized that the pump unit with its hold-down cap could be itself assembled and sealed and then later assembled and sealed on the container without breaking the first seal.' Cook Chemical stresses the long-felt need in the industry for such a device; the inability of others to produce it; and its commercial success--all of which, contends Cook, evidences the nonobvious nature of the device at the time it was developed. On the other hand, Calmar says that the differences between Scoggin's shipper- sprayer and the prior art relate only to the design of the overcap and that the differences are so inconsequential that the device as a whole would have been obvious at the time of its invention to a person having ordinary skill in the art.

\*30 Both courts accepted Cook Chemical's contentions. While the exact basis of the District Court's holding is uncertain, the court did find the subject matter of the patent new, useful and nonobvious. It concluded that Scoggin 'had produced a sealed and protected sprayer unit which the manufacturer need only screw onto the top of its container in much the same fashion as a simple metal cap.' 220 F.Supp., at 418. Its decision seems to be bottomed on the finding that the Scoggin sprayer solved the long-standing problem that had confronted the industry. [FN16] The Court of Appeals also found validity in the 'novel 'marriage' of the sprayer with the insecticide container' which took years in discovery and in 'the immediate commercial success' which it enjoyed. While finding that the individual elements of the invention were 'not novel per se' the court found 'nothing in the prior art suggesting Scoggin's unique combination of these old features \* \* \* as would solve the \* \* \* problems which for years beset the insecticide industry.' It concluded that 'the \* \* \* (device) meets the exacting standard required for a combination of old elements to rise to the level of patentable invention by fulfilling the long-felt need with an economical, efficient, utilitarian apparatus which achieved novel results and immediate commercial success.' 336 F.2d, at 114.

FN16. By the same reasoning, may it not also be said that if (the device) solved a long-sought need, it was likewise novel? If it meets the requirements of being new, novel and useful, it was the subject of invention, although it may have been a sort step, nevertheless it was the last step that ended

the journey. The last step is the one that wins and he who takes it when others could not, is entitled to patent protection.' 220 F.Supp., at 421.

The Prior Art.

Only two of the five prior art patents cited by the Patent Office Examiner in the prosecution of Scoggin's application are necessary to our discussion, i.e., Lohse \*31 U.S. Patent No. 2,119,884 (1938) and Mellon U.S. Patent No. 2,586,687 (1952). Others are cited by Calmar that were not before the Examiner, but of these our purposes require discussion of only the Livingstone U.S. Patent No. 2,715,480 (1953). Simplified drawings of each of these patents are reproduced in the Appendix, Figs. 4--6, for comparison and description.

The Lohse patent (Fig. 4) is a shipper-sprayer designed to perform the same function as Scoggin's device. The differences, recognized by the District Court, are found in the overcap seal which in Lohse is formed by the skirt of the overcap engaging a washer or gasket which rests upon the upper surface of the container cap. The court emphasized that in Lohse '(t)here are no seals above the threads and below the sprayer head.' 220 F.Supp., at 419.

The Mellon patent (Fig. 5), however, discloses the idea of effecting a seal above the threads of the overcap. Mellon's device, likewise a shipper-sprayer, differs from Scoggin's in that its overcap \*\*701 screws directly on the container, and a gasket, rather than a rib, is used to effect the seal.

Finally, Livingstone (Fig. 6) shows a seal above the threads accomplished without the use of a gasket or washer. [FN17] Although Livingstone's arrangement was designed to cover and protect pouring spouts, his sealing feature is strikingly similar to Scoggin's. Livingstone uses a tongue and groove technique in which the tongue, located on the upper surface of the collar, fits into a groove on the inside of the overcap. Scoggin employed the rib and shoulder seal in the identical position and with less efficiency because the Livingstone technique \*32 is inherently a more stable structure, forming an interlock that withstands distortion of the overcap when subjected to rough handling. Indeed, Cook Chemical has now incorporated the Livingstone closure into its own shipper-sprayers as had Calmar in its SS--40.

FN17. While the sealing feature was not specifically claimed in the Livingstone patent, it was disclosed in the drawings and specifications. Under long-settled law the feature became public property. Miller v. Brass Co., 104 U.S. 350, 352, 26 L.Ed. 783 (1882).

The Invalidity of the Patent.

Let us first return to the fundamental disagreement between the parties. Cook Chemical, as we noted at the outset, urges that the invention must be viewed as the overall combination, or--putting it in the language of the statute--that we must consider the subject matter sought to be patented taken as a whole. With this position, taken in the abstract, there is, of course, no quibble. But the history of the prosecution of the Scoggin application in the Patent Office reveals a substantial divergence in respondent's present position.

As originally submitted, the Scoggin application contained 15 claims which in very broad terms claimed the entire combination of spray pump and overcap. No mention of, or claim for, the sealing features was made. All 15 claims were rejected by the Examiner because (1) the applicant was vague and indefinite as to what the invention was, and (2) the claims were met by Lohse. Scoggin canceled these claims and submitted new ones. Upon a further series of rejections and new submissions, the Patent Office Examiner, after an office interview, at last relented. It is crystal clear that after the first rejection, Scoggin relied entirely upon the sealing arrangement as the exclusive patentable difference in his combination. It is likewise clear that it was on that feature that the Examiner allowed the claims. In fact, in a letter accompanying the final submission of claims, Scoggin, through his attorney, stated that 'agreement was reached between the Honorable Examiner and applicant's attorney relative to limitations which must be in the claims in \*33 order to define novelty over the previously applied disclosure of Lohse when considered in view of the newly cited patents of Mellon and Darley, Jr.' (Italics added.)

Moreover, those limitations were specifically spelled out as (1) the use of a rib seal and (2) an overcap whose lower edge did not contact the container cap. Mellon was distinguished, as was the Darley patent, infra, n. 18, on the basis that although it disclosed a hold-down cap with a seal located above the threads,

it did not disclose a rib seal disposed in such position as to cause the lower peripheral edge of the overcap 'to be maintained out of contacting relationship with (the container) cap \* \* \* when \* \* \* (the overcap) was screwed (on) tightly \* \* \*.' Scoggin maintained that the 'obvious modification' of Lohse in view of Mellon would be merely to place the Lohse gasket above the threads with the lower edge of the overcap remaining in tight contact with the container cap or neck of the container itself. In other words, the \*\*702 Scoggin invention was limited to the use of a rib-rather than a washer or gasket--and the existence of a slight space between the overcap and the container cap.

[18][19] It is, of course, well settled that an invention is construed not only in the light of the claims, but also with reference to the file wrapper or prosecution history in the Patent Office. Hogg v. Emerson, 11 How. 587, 13 L.Ed. 824 (1850); Crawford v. Heysinger, 123 U.S. 589, 8 S.Ct. 399, 31 L.Ed. 269 (1887). Claims as allowed must be read and interpreted with reference to rejected ones and to the state of the prior art; and claims that have been narrowed in order to obtain the issuance of a patent by distinguishing the prior art cannot be sustained to cover that which was previously by limitation eliminated from the patent. Powers-Kennedy Contracting Corp. v. Concrete Mixing & Conveying Co., 282 U.S. 175, 185--186, 51 S.Ct. 95, 99, 75 L.Ed. 278 (1930); Schriber-Schroth Co. v. Cleveland Trust Co., 311 U.S. 211, 220--221, 312 U.S. 654, 61 S.Ct. 235, 239--240, 85 L.Ed. 132 (1940).

\*34 [20] Here, the patentee obtained his patent only by accepting the limitations imposed by the Examiner. The claims were carefully drafted to reflect these limitations and Cook Chemical is not now free to assert a broader view of Scoggin's invention. The subject matter as a whole reduces, then, to the distinguishing features clearly incorporated into the claims. We now turn to those features.

As to the space between the skirt of the overcap and the container cap, the District Court found:

'Certainly without a space so described, there could be no inner seal within the cap, but such a space is not new or novel, but it is necessary to the formation of the seal within the hold-down cap. 'To me this language is descriptive of an element of the patent but not a part of the invention. It is too simple, really, to require much discussion. In this device the hold-down cap was intended to perform two functions—to hold down the sprayer head and

to form a solid tight seal between the shoulder and the collar below. In assembling the element it is necessary to provide this space in order to form the seal.' 220 F.Supp. at 420. (Italics added.)

[21] The court correctly viewed the significance of that feature. We are at a loss to explain the Examiner's allowance on the basis of such a distinction. Scoggin was able to convince the Examiner that Mellon's cap contacted the bottle neck while his did not. Although the drawings included in the Mellon application show that the cap might touch the neck of the bottle when fully screwed down, there is nothing--absolutely nothing--which indicates that the cap was designed at any time to engage the bottle neck. It is palpably evident that Mellon embodies a seal formed by a gasket compressed \*35 between the cap and the bottle neck. It follows that the cap in Mellon will not seal if it does not bear down on the gasket and this would be impractical, if not impossible, under the construction urged by Scoggin before the Examiner. Moreover, the space so strongly asserted by Cook Chemical appears quite plainly on the Livingstone device, a reference not cited by the Examiner.

The substitution of a rib built into a collar likewise presents no patentable difference above the prior art. It was fully disclosed and dedicated to the public in the Livingstone patent. Cook Chemical argues, however, that Livingstone is not in the pertinent prior art because it relates to liquid containers having pouring spouts rather than pump sprayers. Apart from the fact that respondent made no such objection to similar \*\*703 references cited by the Examiner, [FN18] so restricted a view of the applicable prior art is not justified. The problems confronting Scoggin and the insecticide industry were not insecticide problems; they were mechanical closure problems. Closure devices in such a closely related art as pouring spouts for liquid containers are at the very least pertinent references. See, II Walker on Patents s 260 (Deller ed. 1937).

FN18. In addition to Livingstone and Mellon, the Examiner cited Slade, U.S. Patent No. 2,844,290 (hold-down cap for detergent cans having a pouring spout); Nilson, U.S. Patent No. 2,118,222 (combined cap and spout for liquid dispensing containers); Darley, Jr., U.S. Patent No. 1,447,712 (containers for toothpaste, cold creams and other semi-liquid substances).

Cook Chemical insists, however, that the development of a workable shipper- sprayer eluded Calmar, who had long and unsuccessfully sought to solve the problem. And, further, that the long-felt need in the industry for a device such as Scoggin's together with its wide commercial success supports its patentability. These legal inferences \*36 or subtests do focus attention on economic and motivational rather than technical issues and are, therefore, more susceptible of judicial treatment than are the highly technical facts often present in patent litigation. See Judge Learned Hand in Reiner v. I. Leon Co., 285 F.2d 501, 504 (2 Cir. 1960). See also Note, Subtests of 'Nonobviousness': A Nontechnical Approach to Patent Validity, 112 U.Pa.L.Rev. 1169 (1964). Such inquiries may lend a helping hand to the judiciary which, as Mr. Justice Frankfurter observed, is most ill-fitted to discharge the technological duties cast upon it by patent legislation. Marconi Wireless Telegraph Co. of America v. United States, 320 U.S. 1, 60, 63 S.Ct. 1393, 87 L.Ed. 1731 (1943). They may also serve to 'guard against slipping into use of hindsight,' Monroe Auto Equipment Co. v. Heckethorn Mfg. & Supply Co., 332 F.2d 406, 412 (1964), and to resist the temptation to read into the prior art the teachings of the invention in issue.

However, these factors do not, in the circumstances of this case, tip the scales of patentability. The Scoggin invention, as limited by the Patent Office and accepted by Scoggin, rests upon exceedingly small and quite non-technical mechanical differences in a device which was old in the art. At the latest, those differences were rendered apparent in 1953 by the appearance of the Livingstone patent, and unsuccessful attempts to reach a solution to the problems confronting Scoggin made before that time

became wholly irrelevant. It is also irrelevant that no one apparently chose to avail himself of knowledge stored in the Patent Office and readily available by the simple expedient of conducting a patent search-a prudent and nowadays common preliminary to well organized research. Mast. Foos & Co. v. Stover Mfg.Co., 177 U.S. 485, 20 S.Ct. 708, 44 L.Ed. 856 (1900). To us, the limited claims of the Scoggin patent are clearly evident from the prior art as it stood at the time of the invention.

\*37 We conclude that the claims in issue in the Scoggin patent must fall as not meeting the test of <u>s</u> 103, since the differences between them and the pertinent prior art would have been obvious to a person reasonably skilled in that art.

The judgment of the Court of Appeals in No. 11 is affirmed. The judgment of the Court of Appeals in Nos. 37 and 43 is reversed and the cases remanded to the District Court for disposition not inconsistent with this opinion. It is so ordered.

Judgment of Court of Appeals in No. 11 affirmed. Judgment of Court of Appeals in Nos. 37 and 43 reversed and cases remanded to District Court.

Mr. Justice STEWART took no part in the consideration or decision of Nos. 37 and 43.

Mr. Justice FORTAS took no part in the consideration or decision of these cases.

APPENDIX TO OPINION OF THE COURT. FIGURE 1.-GRAHAM '798 PATENT

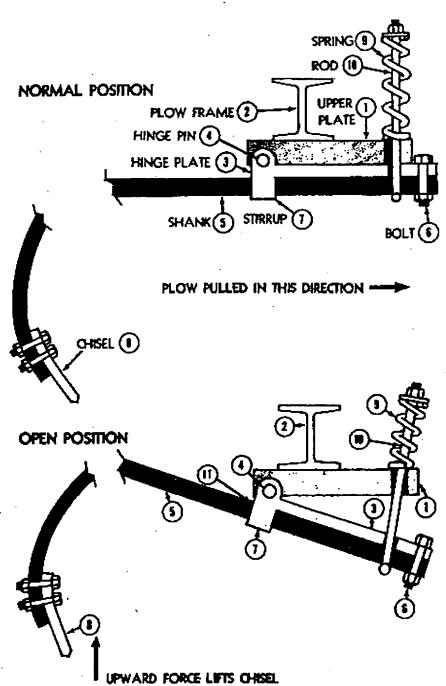
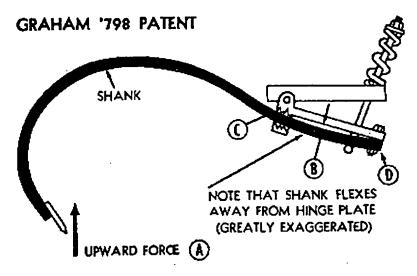
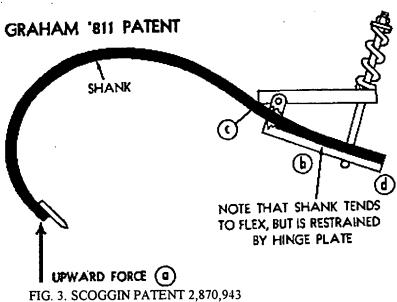


FIGURE 2.-FLEX COMPARISON





# Hold-down Cap Sprayer Head Sealing Rib Container Gasket

Cap

Pump Barrel

Container

FIG. 5. MELLON PATENT 2,586,687 (Prior art 1952)

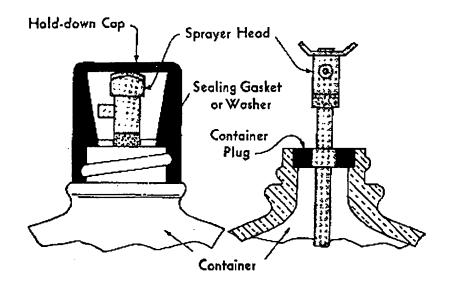


FIG. 4. LOHSE PATENT 2,119,884

FULL TEXT OF CASES (USPQ2D)
All Other Cases

In re Bell (CA FC) 26 USPQ2d 1529 In re Bell

# U.S. Court of Appeals Federal Circuit 26 USPQ2d 1529

Decided April 20, 1993 No. 92-1375

#### Headnotes

**PATENTS** 

1. Patentability/Validity -- Obviousness -- In general (§ 115.0901)

Patentability/Validity -- Obviousness -- Relevant prior art -- Particular inventions (§ 115.0903.03)

Established relationship in genetic code between nucleic acid and protein it encodes does not make gene prima facie obvious over its correspondent protein in same way that closely related homologs, analogs, and isomers in chemistry may create prima facie case, since there are vast number of nucleotide sequences that might code for specific protein due to "degeneracy" of genetic code; gene might be obvious over correspondent protein if latter is known amino acid sequence specified exclusively by "unique" codons, but claims in application for nucleic acid molecules containing human sequences coding for human insulin-like growth factors I and II (IGF) are not obvious in view of cited prior art disclosing amino acid sequences for IGF I and II, since cited art suggests nearly infinite number of sequences, but fails to suggest which of those are human nucleic acid sequences coding for IGF.

## 2. Patentability/Validity -- Obviousness -- Combining references (§ 115.0905)

Reference disclosing general method for isolating genes, in combination with prior art disclosing amino acid sequences for insulin-like growth factors I and II (IGF), does not render obvious application claims for nucleic acid molecules containing human sequences coding for human IGF I and II, since, absent some teaching or suggestion supporting combination, obviousness is not established by combining teachings of prior art to produce claimed invention, since reference in question teaches away from invention claimed in application by emphasizing importance of "unique" codons, and since reference thus cannot be held to "fairly suggest" that its teachings be combined with those of prior art, which discloses amino acid sequences lacking "unique" codons.

## 3. Patentability/Validity -- Obviousness -- In general (§ 115.0901)

## Patent construction -- Claims -- Process (§ 125.1309)

Similarities between method by which applicants made claimed nucleic acid molecules, and method for isolating genes taught by prior art reference, do not render application claims obvious, since applicants claim compositions, rather than method of making them.

## Case History and Disposition:

Page 1529

Appeal from the U.S. Patent and Trademark Office, Board of Patent Appeals and Interferences.

Patent application of Graeme I. Bell, Leslie B. Rall and James P. Merryweather, serial no. 07/065,673 ("preproinsulin-like growth factors I and II"). From decision affirming examiner's final rejection of claims 25-46, applicants appeal. Reversed.

## Attorneys:

Robert P. Blackburn, Emeryville, Calif. (Debra A. Shetka and Thomas E. Ciotti, of Morrison & Foerster, Palo Alto, Calif., and Donald S. Chisum, of Morrison & Foerster, Seattle, Wash., on brief), for appellant.

Teddy S. Gron, associate solicitor (Fred E. McKelvey, solicitor, on brief; John W. Dew hirst, Lee E. Barrett, Richard E. Schafer, and Albin F. Drost, of counsel), for PTO.

Judge:

Before Rich, Lourie, and Schall, circuit judges.

Page 1529

## **Opinion Text**

Opinion By: Lourie, J.

Applicants Graeme I. Bell, Leslie B. Rall, and James P. Merryweather (Bell) appeal from the March 10, 1992 decision of the U.S. Patent and Trademark Office (PTO) Board of Patent Appeals and Interferences, Appeal No. 91-1124, affirming the examiner's final rejection of claims 25-46 of application Serial No. 065,673, entitled "Preproinsulin-Like Growth Factors I and II," as unpatentable on the ground of obviousness under 35 U.S.C. Section 103 (1988). Because the Board erred in concluding that the claimed nucleic acid molecules would have been obvious in light of the cited prior art, we reverse.

## **BACKGROUND**

The claims of the application at issue are directed to nucleic acid molecules (DNA and

## Page 1530

RNA)1 containing human sequences 2 which code for human insulin-like growth factors I and II (IGF), single chain serum proteins that play a role in the mediation of somatic cell growth following the administration of growth hormones.3 The relevant prior art consists of two publications by Rinderknecht 4 disclosing amino acid sequences for IGF-I and -II and U.S. Patent 4,394,443 to Weissman et al., entitled "Method for Cloning Genes." Weissman describes a general method for isolating a gene for which at least a short amino acid sequence of the encoded protein is known. The method involves preparing a nucleotide probe corresponding to the known amino acid sequence and using that probe to isolate the gene of interest. It teaches that it is advantageous to design a probe based on amino acids specified by unique codons. 5 The Weissman patent specifically describes the isolation of a gene which codes for human histocompatibility antigen, a protein unrelated to IGF. It describes the design of the probe employed, stating that it was based on amino acids specified by unique codons. The examiner rejected the claims as obvious over the combined teachings of Rinderknecht and Weissman. She determined that it would have been obvious, "albeit

tedious," from the teachings of Weissman to prepare probes based on the Rinderknecht amino acid sequences to obtain the claimed nucleic acid molecules. According to the examiner, "it is clear from [Weissman] that the ordinary artisan knows how to find the nucleic acid when the amino acid sequence is known" and that "the claimed sequences and hosts would have been readily determinable by and obvious to those of ordinary skill in the art at the time the invention was made."

The Board affirmed the examiner's rejection, holding that the examiner had established a prima facie case of obviousness for the claimed sequences "despite the lack of conventional indicia of obviousness, e.g., structural similarity between the DNA which codes for IGF-I and the amino acid sequence of the polypeptide which constitues [sic] IGF-I." Slip op. at 6. The Board reasoned that "although a protein and its DNA are not structurally similar, they are correspondently linked via the genetic code." Id. at 4 n.l. In view of Weissman, the Board concluded that there was no evidence "that one skilled in the art, knowing the amino acid sequences of the desired proteins, would not have been able to predictably clone the desired

#### Page 1531

DNA sequences without undue experimentation." *Id.* at 8. The issue before us is whether the Board correctly determined that the amino acid sequence of a protein in conjunction with a reference indicating a general method of cloning renders the gene *prima facie* obvious.

#### **DISCUSSION**

We review an obviousness determination by the Board de novo. In re Vaeck, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991). Bell argues that the PTO has not shown how the prior art references, either alone or in combination, teach or suggest the claimed invention, and thus that it has failed to establish a prima facie case of obviousness.

We agree. The PTO bears the burden of establishing a case of prima facie obviousness. In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). "A prima facie case of obviousness is established when the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art." In re Rinehart, 531 F.2d 1048, 1051, 189 USPQ 143, 147 (CCPA 1976). The Board supported the examiner's view that the "correspondent link" between a gene and its encoded protein via the genetic code renders the gene obvious when the amino acid sequence is known. In effect, this amounts to a rejection based on the Rinderknecht references alone. Implicit in that conclusion is the proposition that, just as closely related homologs, analogs, and isomers in chemistry may create a prima facie case, see In re Dillon, 919 F.2d 688, 696, 16 USPQ2d 1897, 1904 (Fed. Cir. 1990) (in banc), cert. denied, 111 S. Ct. 1682 (1991), the established relationship in the genetic code between a nucleic acid and the protein it encodes also makes a gene prima facie obvious over its correspondent protein.

[1] We do not accept this proposition. It may be true that, knowing the structure of the protein, one can use the genetic code to hypothesize possible structures for the corresponding gene and that one thus has the potential for obtaining that gene. However,

because of the degeneracy of the genetic code, there are a vast number of nucleotide sequences that might code for a specific protein. In the case of IGF, Bell has argued without contradiction that the Rinderknecht amino acid sequences could be coded for by more than 10 <sup>36</sup> different nucleotide sequences, only a few of which are the human sequences that Bell now claims. Therefore, given the nearly infinite number of possibilities suggested by the prior art, and the failure of the cited prior art to suggest which of those possibilities is the human sequence, the claimed sequences would not have been obvious.

Bell does not claim all of the 10 <sup>36</sup> nucleic acids that might potentially code for IGF. Neither does Bell claim all nucleic acids coding for a protein having the biological activity of IGF. Rather, Bell claims only the human nucleic acid sequences coding for IGF. Absent anything in the cited prior art suggesting which of the 10 <sup>36</sup> possible sequences suggested by Rinderknecht corresponds to the IGF gene, the PTO has not met its burden of establishing that the prior art would have suggested the claimed sequences. This is not to say that a gene is never rendered obvious when the amino acid sequence of its coded protein is known. Bell concedes that in a case in which a known amino acid sequence is specified exclusively by unique codons, the gene might have been obvious. Such a case is not before us. 6 Here, where Rinderknecht suggests a vast number of possible nucleic acid sequences, we conclude that the claimed human sequences would not have been obvious.

[2] Combining Rinderknecht with Weissman does not fill the gap. Obviousness " 'cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination.' " In re Fine, 837 F.2d at 1075, 5 USPQ2d at 1598 (citing ACS Hosp. Sys. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984)). What a reference teaches and whether it teaches toward or away from the claimed invention are questions of fact. See Raytheon Co. v. Roper Corp., 724 F.2d 951, 960-61, 220 USPQ 592, 599-600 (Fed. Cir. 1983), cert. denied, 469 U.S. 835 [225 USPQ 232] (1984).

While Weissman discloses a general method for isolating genes, he appears to teach away from the claimed invention by emphasizing the importance of unique codons for the amino acids. Weissman suggests that it is generally advantageous to design a probe based on an amino acid sequence specified by unique codons, and also teaches that it is "counterproductive" to use a primer having

#### Page 1532

more than 14-16 nucleotides unless the known amino acid sequence has 4-5 amino acids coded for by unique codons. Bell, in contrast, used a probe having 23 nucleotides based on a sequence of eight amino acids, none of which were unique. Weissman therefore tends to teach away from the claimed sequences since Rinderknecht shows that IGF-I has only a single amino acid with a unique codon and IGF-II has none.

The PTO, in urging us to affirm the Board, points to the suggestion in Weissman that the disclosed method can "easily" be applied to isolate genes for an array of proteins including peptide hormones. The PTO thus argues that in view of Weissman, a gene is rendered obvious once the amino acid sequence of its translated protein is known. We decline to afford that broad a scope to the teachings of Weissman. While "a reference

must be considered not only for what it expressly teaches, but also for what it fairly suggests," *In re Burckel*, 592 F.2d 1175, 1179, 201 USPQ 67, 70 (CCPA 1979), we cannot say that Weissman "fairly suggests" that its teachings should be combined with those of Rinderknecht, since it nowhere suggests how to apply its teachings to amino acid sequences without unique codons.

We conclude that the Board clearly erred in determining that Weissman teaches toward, rather than away from, the claimed sequences. Therefore, the requisite teaching or suggestion to combine the teachings of the cited prior art references is absent, see In re Fine, 837 F.2d 1075, 5 USPQ2d at 1599, and the PTO has not established that the claimed sequences would have been obvious over the combination of Rinderknecht and Weissman.

[3] Finally, the PTO emphasizes the similarities between the method by which Bell made the claimed sequences and the method taught by Weissman. The PTO's focus on Bell's method is misplaced. Bell does not claim a method. Bell claims compositions, and the issue is the obviousness of the claimed compositions, not of the method by which they are made. See In re Thorpe, 777 F.2d 695, 697, 227 USPQ 964, 966 (Fed. Cir. 1985) ("The patentability of a product does not depend on its method of production.").

## CONCLUSION

Because we conclude that the combination of prior art references does not render the claimed invention obvious, we reverse the Board's decision affirming the examiner's rejection of claims 25-46.

REVERSED

## **Footnotes**

Footnote 1. A basic familiarity with recombinant DNA technology is presumed. For a general discussion, see In re O'Farrell, 853 F.2d 894, 895-99, 7 USPQ2d 1673, 1674-77 (Fed. Cir. 1988).

Footnote 2. Interchangeably referred to as "native" sequences and "genes."

Footnote 3. Claim 25 is conceded to be representative of the claims at issue:

A composition comprising nucleic acid molecules containing a human sequence encoding insulin-like growth factor (hIGF) substantially free of nucleic acid molecules not containing said hIGF sequence, wherein said hIGF sequence is selected from the group consisting of:

- (a) 5 '-GGA CCG GAG ACG CUC UGC GGG GCU GAG CUG GUG GAU GCU CUU CAG UUC GUG UGU GGA GAC AGG GGC UUU UAU UUC AAC AAG CCC ACA GGG UAU GGC UCC AGC AGU CGG AGG GCG CCU CAG ACA GGU AUC GUG GAU GAG UGC UGC UUC CGG AGC UGU GAU CUA AGG AGG CUG GAG AUG UAU UGC GCA CCC CUC AAG CCU GCC AAG UCA GCU-3 ', wherein U can also be T;
- (b) 5 '-GCU UAC CGC CCC AGU GAG ACC CUG UGC GGC GGG GAG CUG GUG GAC ACC CUC CAG UUC GUC UGU GGG GAC CGC GGC UUC UAC UUC AGC AGG CCC GCA AGC CGU GUG AGC CGU CGC AGC CGU GGC AUC GUU

GAG GAG UGC UGU UUC CGC AGC UGU GAC CUG GCC CUC CUG GAG ACG UAC UGU GCU ACC CCC GCC AAG UCC GAG-3 ', wherein U can also be T;

(c) nucleic acid sequences complementary to (a) or (b); and

(d) fragments of (a), (b) or (c) that are at least 18 bases in length and which will

selectively hybridize to human genomic DNA encoding hIGF.

The other rejected claims are apparently directed to cellular hosts transformed with the claimed nucleic acid sequences. Because their fate is dependent upon that of claim 25, neither appellant nor the Patent and Trademark Office have considered them separately and we will not do so either.

Footnote 4. Rinderknecht et al., The Amino Acid Sequence of Human Insulin-like Growth Factor I and Its Structural Homology with Proinsulin, 253 The Journal of Biological Chemistry 2769-76 (1978), Rinderknecht et al., Primary Structure of Human Insulin-like Growth Factor II, 89 FEB Letters 283-86 (May 1978).

Footnote 5. A sequence of three nucleotides, called a codon, codes for each of the twenty natural amino acids. Since there are twenty amino acids and sixty-four possible codons, most amino acids are specified by more than one codon. This is referred to as "degeneracy" in the genetic code. The term "unique" refers to an amino acid coded for by a single codon. See Amgen Inc. v. Chugai Pharmaceutical Co., 927 F.2d 1200, 1207-08 n.4, 18 USPQ2d 1016, 1022 n.4 (Fed. Cir.), cert. denied, 112 S. Ct. 169 (1991).

Footnote 6. We also express no opinion concerning the reverse proposition, that knowledge of the structure of a DNA, e.g., a cDNA, might make a coded protein obvious.

- End of Case -

Intellectual Property Library

# In re Casey, 152 USPQ 235 (CCPA 1967)

# In re Casey

# (CCPA) 152 USPO 235

Decided Jan. 12, 1967
Appl. No. 7718
U.S. Court of Customs and Patent Appeals

### Headnotes

#### **PATENTS**

1. Patentability - New use or function-In general (§ 51.551)

Patentability - Tests of - In general (§ 51.701)

Manner or method in which machine is to be utilized is not germane to issue of patentability of machine itself.

Particular patents-Tape Dispenser

Casey, Brush Fed Tape Dispenser, claims 1 to 6 of application refused.

# Case History and Disposition:

Page 235

Appeal from Board of Appeals of the Patent Office.

Application for patent of James H. Casey, Serial No. 10,239, filed Feb. 23, 1960; Patent Office Group 340. From decision rejecting claims 1 to 6, applicant appeals. Affirmed.

Attorneys:

Charles H. Lauder, St. Paul, Minn., for appellant.

Joseph Schimmel (S. William Cochran of counsel) for Commissioner of Patents.

Judge:

Before Worley, Chief Judge, Rich, Smith, and Almond, Associate Judges, and Kirkpatrick, Judge. \*

## **Opinion Text**

Opinion By:

Almond, Judge.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the rejection of claims 1 through 6 of appellant's application <sup>1</sup> entitled "Brush Fed Tape Dispenser." Claims 7 and 8 were allowed.

The claimed invention relates to a machine for dispensing adhesive tape.

Claim 1 is illustrative:

1. A taping machine comprising a supporting structure, a brush attached to said supporting structure, said brush being formed with projecting bristles which terminate in free ends to collectively define a surface to which adhesive tape will detachably adhere, and means for providing relative motion between said brush and said supporting structure while adhesive tape is adhered to said surface.

Figures 2 and 3 of appellant's drawings are depicted below:

Page 236

### FIG. 2

Tabular, graphic, or textual material set at this point is not available. Please consult hard copy or call BNA PLUS at 1-800-452-7773 or 202-452-4323.

### FIG. 3

Tabular, graphic, or textual material set at this point is not available. Please consult hard copy or call BNA PLUS at 1-800-452-7773 or 202-452-4323.

The machine comprises a mounting plate 20, a hub 35 rotatably attached thereto carrying a supply roll 34 of tape T, a roller guide 42 rotatably attached to the mounting plate 20, a brush 24 rotatably attached to said mounting plate for rotation counterclockwise in response to propulsion from motor 21, and a knife 50 mounted on a pivoted arm 52 operated by solenoid 54. Tape T is threaded around roller guide 42 and the adhesive side of the tape is then adhered to the surface formed by the free ends of bristles 25 of brush 24. Operation of motor 21 will cause tape T to be pulled from supply roll 34 and moved through the machine by reason of its adhesion to brush 24. Operation of solenoid 54 brings knife 50 in contact with tape T to sever same while it is adhered to

the ends of the bristles of the brush.

The references are:

Kienzle 2,142,728 January 3, 1939 Hackett 2,763,481 September 18, 1956 Engberg Re. 22,945 December 2, 1947

Kienzle shows a device for perforating various types of sheet materials by use of

needle-like pins. Kienzle states:

\* \* \* these pins can form a single group or a plurality of groups arranged side by side or behind one another, or also in staggered positions and they can be operated so as to move simultaneously, or they can be timed differently. For supporting the sheet to be perforated I use a carrier which is \* \* \* an open structure \* \* \* to let the pins enter freely when they penetrate the sheet farther

### Page 237

than its thickness. \* \* \* [The] carrier \* \* \* may be a drum the surface of which consists of felt, or of a brush \* \* \* which likewise can support the sheet against the action of the pins without offering the said pins any resistance against penetrating.

Kienzle's sheet is supported by a rotary brush with open end bristles.

Hackett shows a tape dispensing device having a dispensing drum rotatably mounted on supporting means. The drum supports fins to which adhesive tape is adhered. Tape is advanced from a supply through rotational movement of the drum by pneumatic means. The tape is severed by means of a blade

Engberg discloses apparatus for dispensing adhesive tape by adhering the tape to spaced carriers in the form of transverse blades carried in orbit by an endless belt around two rotary toothed drums. A flat spring guides and presses the adhesive side of the tape against the blades. The belt and adhered tape are advanced by operation of a handle. The tape is severed between two tape feeding blades by a cutting blade.

In rejecting claim 1 the examiner applied 35 U.S.C. 103 and held the claim unpatentable over Kienzle. In analyzing claim 1 the examiner pointed out the structural limitations therein and found them all met by Kienzle except the support for the brush which he considered obvious. He stated that:

The remainder of the claim is made up of the preamble and functional language which incorporates therein a specific workpiece (adhesive tape) which is

considered to be patentably immaterial.

Again applying 35 U.S.C. 103, the examiner rejected claims 2 to 6 as unpatentable over Kienzle in view of Hackett. He noted that claims 2-4 differ from claim 1 only in the addition of a severing means and that claims 5 and 6 further add a means to support the tape supply and a guiding means to aid delivery to the feed roll. The examiner pointed to the fact that Kienzle discloses a perforating means which punctures the sheet material supported on the brush bristles, which material passes between the perforating means and the rotatable brush. He also noted that Hackett in his disclosure of a tape dispenser teaches the use of a transverse severing means and held that it would be obvious to one skilled in the art to substitute the Hackett severing means for the perforator of Kienzle.

He further noted that Hackett teaches a material supply roll and presumably includes in his dispenser guiding means as shown in Engberg inasmuch as Hackett mentions the Engberg patent in his disclosure.

In its affirmance of the rejection of claims 1 to 6 the board, noting appellant's argument that the claims require that the reference used be directed to a "taping machine" and "tape dispensing machine" as recited in the preambles of said claims, stated

Such designation in the preamble is not definitive of specific structure or character of mechanism. The claim must stand or fall upon the elements recited therein. While claim 1 continues to note that adhesive tape will adhere to a brush, the structure so indicated differs in no way from that present in Kienzle where a driven brush is shown as supporting a band of material. The structure thus provided has the capabilities recited which is all that is required to satisfy the terms of the claims. \* \* \*

We agree with the solicitor that the real issue of substance in this case is resolvable on the basis of the merits of the rejection of claim 1, all of the structural limitations of which were held either to be shown in Kienzle or to be obvious in view thereof.

The essence of appellant's contention resides in the argument that:

Both the examiner and the Board have entirely disregarded the words "taping machine" and "tape dispensing machine" as they appear in claims 1 through 6 \* \* \* [and] the language in the claims concerning the adherence of the adhesive tape to the surface formed by the free ends of the bristles of the brush \* \* \*.

Appellant asserts that the language relating to the adherence of the tape to the bristles of the brush is a functional expression which must be given weight and that, when taken in conjunction with the preamble words "taping machine" and "tape dispensing machine," the error of the board in disregarding such language becomes manifest.

As to the obviousness of the structure recited in claim 1, we have no doubt that the Kienzle brush is intended to be mounted on a supporting structure accompanied by means of rotation. That portion of the claim which requires that "projecting bristles \* \* \* terminate in free ends to collectively define a surface" is anticipated by Kienzle.

We are not persuaded that the board "entirely disregarded" the preamble and functional language as asserted by appellant. The board found that appellant's structure, even in view of the claim language, differed in no way from

#### Page 238

the disclosure of Kienzle. The board considered that the structure provided by the reference possessed the capabilities requisite to meet the terms of the claims. The rationale of the board clearly deducible from the language employed is that the Kienzle apparatus as it obviously must be constructed would inherently perform all of the functions called for in claim 1, if it were used with adhesive tape as the workpiece.

Kienzle discloses a brush bristle surface identical to that of appellant. It must follow therefore that, in the language of the claim, the Kienzle surface is one "to which adhesive tape will detachably adhere." It also logically follows that in the use of the Kienzle device with adhesive tape, rotation of the brush would ensue "while adhesive tape is adhered to said surface." The difference between the teaching of Kienzle and the claim

in issue resides in the *use* of the Kienzle apparatus. If adhesive tape is used as the workpiece, the terms of claim 1 are met.

Appellant states:

The fundamental difference between the machine of appellant's invention and the machine shown and described by Kienzle is that appellant's machine is a tape dispenser while the machine of Kienzle is a perforating device. [Emphasis supplied.]

It seems apparent, therefore, that the position taken by appellant does not involve any unobvious difference between the structure of his apparatus and that of Kienzle, but relates solely to the matter of use of the devices. Appellant augments this position by stating his concept to be "that the adhesive contained on adhesive tape can be adhered to the ends of the bristles of a brush and the brush can then be moved to dispense the tape from the machine \* \* \* "

We agree with the view of the solicitor that appellant's concept:

- \* \* \* would seem clearly to relate to a method, that is, a method of handling adhesive tape, rather than an apparatus. Presenting adhesive tape to a roll in such a way as to adhere it to the roll and causing movement of the roll "while adhesive tape is adhered to said surface" are method steps and cannot properly confer patentability on an apparatus claim.
- [1] The claims in issue call for an apparatus or machine, viz. a tape dispensing machine. The manner or method in which such machine is to be utilized is not germane to the issue of patentability of the machine itself. This view finds clear support in In re Otto, 50 CCPA 938, 940, 312 F.2d 937, 136 USPQ 458, 459. This court there stated:

First of all it should be remembered that the claims are directed to a particular device and a method of making that device, not to a method of curling hair wherein this particular device is used. It seems appellants are endeavoring to predicate patentability upon a certain procedure for curling hair using this device and involving a number of steps in the process. This process is irrelevant as is the recitation involving the hair being wound around the core insofar as the determination of whether these particular claims should be allowed or rejected. In re Lampert et al., 44 CCPA 958, 245 F.2d 253, 114 USPQ 163; In re Rishoi et al., 39 CCPA 1004, 197 F.2d 342, 94 USPQ 71; In re Mulholland, 29 CCPA 1222, 129 F.2d 860, 54 USPQ 388; In re Young, 22 CCPA 1060, 75 F.2d 996, 25 USPQ 69. It will be seen that the Lampert case pertains to the impropriety of relying on a method concept to distinguish a structural claim over the prior art and Rishoi and the others indicate that inclusion of the material or article worked upon by a structure being claimed does not impart patentability to the claims.

Appellant cites and relies on In re Neugebauer, 51 CCPA 1138, 330 F.2d 353, 141 USPQ 205; In re Attwood, 53 CCPA 784, 354 F.2d 365, 148 USPQ 203 and In re Van Lint, 53 CCPA 844, 354 F.2d 674, 148 USPQ 285. Our analysis of these cases in light of the decision reached by the board does not persuade us that they support the contention here asserted by appellant. In fact, we think the rationale of In re Neugebauer, wherein the preambles of the claims recited "an electrophotographic material," supports the decision of the board in the instant case. We consider pertinent here the following statement of the court relative to the weight to be accorded preambles as positive

structural limitations, 141 USPQ at 208:

As to the claim preamble, the court has frequently considered problems related thereto. See, e.g., Kropa v. Robie et al., 38 CCPA 858, 187 F.2d 150, 88 USPQ 478, and cases cited therein. We know no general rule for deciding the weight to be given preambles as positive structural limitations. Ellis, for example, states "Preambles are used primarily to give the field within which the invention has utility. They designate use rather than structure, form or composition. (Emphasis court's.)

#### Page 239

In the instant case, we do not consider it to be controlling that the reference does not in haec verba disclose "electrophotographic materials." The claims as a whole must be analyzed in light of the disclosure to see if the article defined thereby is distinguishable in fact, vis-a-vis in verbis, over the prior art.

In the Attwood case, the preamble itself called for a particular structure. The same is not true here. The references in claim 1 to adhesive tape handling do not expressly or impliedly require any particular structure in addition to that of Kienzle.

As to claims 2 to 6, we do not find that they involve any substantial issue of patentability over and above that presented by claim 1. In fact, appellant's brief contains no contention that these claims embrace any patentable feature not recited in claim 1.

Upon consideration of the arguments of counsel and analysis of the authorities cited, we find no reversible error in the decision of the board.

The decision of the board is therefore affirmed.

### **Footnotes**

Footnote 1. Serial No. 10,239, filed February 23, 1960.

Footnote \* Senior District Judge, Eastern District of Pennsylvania, sitting by designation

- End of Case -

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FULL TEXT OF CASES (USPQ2D)
All Other Cases

In re Oetiker (CA FC) 24 USPQ2d 1443 In re Oetiker

# U.S. Court of Appeals Federal Circuit 24 USPQ2d 1443

Decided October 13, 1992 No. 91-1026

### Headnotes

#### **PATENTS**

1. Practice and procedure in Patent and Trademark Office -- Prosecution -- In general (§ 110.0901)

## Patentability/Validity -- Obviousness -- In general (§ 115.0901)

"Prima facie" case is procedural tool of patent examination which allocates burdens of going foward as between examiner and applicant; examiner bears initial burden, on review of prior art or on any other ground, of presenting prima facie case of unpatentability, and if that burden is met, burden of coming forward with evidence or argument shifts to applicant, and after applicant submits such evidence in response, patentability is determined on totality of record, by preponderance of evidence with due consideration to persuasiveness of argument.

2. Practice and procedure in Patent and Trademark Office -- Board of Patent Appeals and Interferences -- In general (§ 110.1101)

Board of Patent Appeals and Interferences, in reviewing examiner's decision on appeal, must necessarily weigh all evidence and argument, and board's observation that examiner made prima facie case of unpatentability is not improper, as long as ultimate determination of patentability is made on entire record.

3. Practice and procedure in Patent and Trademark Office -- Prosecution -- In general (§ 110.0901)

Patentability/Validity -- Obviousness -- In general (§ 115.0901)

Concept of "prima facie" case of obviousness, which places initial burden on examiner, is of broad applicability and is not limited to chemical practice; that prima facie case may be established, or rebutted, by different forms of evidence in various technologies does not restrict concept to any particular field of technology.

4. Patentability/Validity -- Obviousness -- Relevant prior art -- In general (§ 115.0903.01)

Patentability/Validity -- Obviousness -- Combining references (§ 115.0905)

Prior art reference, in order to be relied upon as basis for rejecting applicant's invention, must either be in field of applicant's endeavor or, if not, be reasonably pertinent to particular problem with which inventor was concerned; combination of elements from non-analogous sources, in manner that reconstructs applicant's invention only with benefit of hindsight, is insufficient to present prima facie case of obviousness.

5. Patentability/Validity -- Obviousness -- In general (§ 115.0901)
Simplicity of invention is not itself inimical to patentability.

## Case History and Disposition:

Page 1443

Appeal from the U.S. Patent and Trademark Office, Board of Patent Appeals and Interferences.

Application for patent, no. 06/942,694, filed by Hans Oetiker. From decision holding claims unpatentable, applicant appeals. Reversed; Nies,

C.J., and Plager, J., concurring in separate opinions.

Attorneys:

Paul M. Craig, Jr., Washington, D.C., for appellant.

John W. Dewhirst (Fred E. McKelvey, solicitor and Robert D. Edmonds, associate solicitor, with him on brief), for appellee.

Judge:

Before Nies, chief judge, and Newman and Plager, circuit judges.

### **Opinion Text**

Opinion By:

Newman, J.

Hans Oetiker appeals the decision of the United States Patent and Trademark Office Board of Patent Appeals and Interferences, holding unpatentable claims 1-14 and 6-21, all of the claims in patent application No. 06/942,694. 1 Oetiker appeals on procedural and substantive grounds.

I PROCEDURE Background

All of the claims were finally rejected for obviousness in terms of 35 U.S.C. Section 103. The

#### Page 1444

Board, upholding the rejection, stated that "the examiner has established a prima facie case of obviousness". Which is unrebutted by any objective evidence of nonobviousness". Oetiker stated that this Board holding was the first rejection of his claims for being "prima facie obvious", and filed rebuttal evidence with a petition for reconsideration. The Board declined to consider the new evidence or change its decision. Oetiker states that a holding of prima facie obviousness means, in patent examination, that the claimed invention is subject to a rebuttable presumption of obviousness; that is, if the applicant can provide evidence or argument in support of unobviousness, such evidence and argument will be considered, and the question of patentability will be redecided on the entire record. Oetiker states that a rejection made in the words "prima facie obvious" is understood by patent examiners and practitioners as an invitation to provide such rebuttal evidence.

Thus Oetiker argues that a holding by the Board of prima facie obviousness is a new ground of rejection, for during prosecution the examiner did not reject the claims in these words. Treating it as such, Oetiker offered affidavit evidence not previously filed, and requested reconsideration on the basis of this new evidence, or remand to the examiner Copyright 2003, The Bureau of National Affairs, Inc. Reproduction or redistribution, in whole or in part, and in any form, without express written permission, is prohibited except as permitted by the BNA Copyright Policy. http://www.bna.com/corp/index.html#V

for this purpose, in accordance with 37 C.F.R. Section 1.196(b):

Section 1.196(b)... When the Board... makes a new rejection of an appealed claim, the appellant may exercise either of the following two options...:

- (1) The appellant may submit . . . a showing of facts . . . and have the matter reconsidered by the examiner in which event the application will be remanded to the examiner . . . .
- (2) The appellant may have the case reconsidered under Section 1.197(b) by the Board... upon the same record.

The Board on reconsideration granted neither of the options of Section 1.196(b), stating that it had not made a new rejection.

At argument before this court the Commissioner's counsel suggested that Oetiker could refile his patent application, pay a new fee, and obtain review of this new evidence in a new examination. Oetiker states that he was entitled to a complete examination, and did not get it.

### Discussion

[1] The prima facie case is a procedural tool of patent examination, allocating the burdens of going forward as between examiner and applicant. In re Spada, 911 F.2d 705, 707 n.3, 15 USPQ2d 1655, 1657 n.3 (Fed. Cir. 1990). The term "prima facie case" refers only to the initial examination step. In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976). As discussed in In re Piasecki, the examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a prima facie case of unpatentability. If that burden is met, the burden of coming forward with evidence or argument shifts to the applicant.

After evidence or argument is submitted by the applicant in response, patentability is determined on the totality of the record, by a preponderance of evidence with due consideration to persuasiveness of argument. See In re Spada, supra; In re Corkill, 771 F.2d 1496, 1500, 226 USPQ 1005, 1008 (Fed. Cir. 1985); In re Caveny, 761 F.2d 671, 674, 226 USPQ 1, 3 (Fed. Cir. 1985); In re Johnson, 747 F.2d 1456, 1460, 223 USPQ 1260, 1263 (Fed. Cir. 1984).

If examination at the initial stage does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of the patent. See In re Grabiak, 769 F.2d 729, 733, 226 USPQ 870, 873 (Fed. Cir. 1985); In re Rinehart, supra.

[2] In reviewing the examiner's decision on appeal, the Board must necessarily weigh all of the evidence and argument. An observation by the Board that the examiner made a prima facie case is not improper, as long as the ultimate determination of patentability is made on the entire record. In re Piasecki, 745 F.2d at 1472, 223 USPQ at 788, In re Rinehart, 531 F.2d at 1052, 189 USPQ at 147.

The record here reveals that the application was fully prosecuted. References were cited and applied by the examiner, the applicant responded with argument, and the examiner then issued a final rejection, stating why he was not persuaded by the applicant's argument. On review the Board stated that its decision was reached "after careful consideration of the appealed claims, the evidence of obviousness relied upon by the

examiner and the arguments advanced by the appellant and the examiner". The Board explained why it was unpersuaded by Oetiker's arguments on appeal. We discern no irregularity in the procedure. The Board, in explaining that the examiner's rejections constituted a *prima facie* case of obviousness, did not make a new rejection.

[3] Oetiker also argues that the concept of a " *prima facie* case of obviousness" has no role outside of the chemical arts. Oetiker

### Page 1445

refers to the origins of this term in the chemical practice, where properties may not be apparent from chemical structure. Oetiker distinguishes mechanical inventions, where the properties and workings of a mechanical device are apparent in the drawing of the structure. We think that the PTO is correct in treating the concept of the *prima facie* case as of broad applicability, for it places the initial burden on the examiner, the appropriate procedure whatever the technological class of invention. That a *prima facie* case may be established, or rebutted, by different forms of evidence in various technologies does not restrict the concept to any particular field of technology. " [T]he requirement of unobviousness in the case of chemical inventions is the same as for other types of inventions". *In re Johnson*, 747 F.2d at 1460, 223 USPQ at 1263. This procedural tool is recognized in fields outside of the chemical arts. *E.g., In re Benno*, 768 F.2d 1340, 226 USPQ 683 (Fed. Cir. 1985); *In re McCarthy*, 763 F.2d 411, 226 USPQ 99 (Fed. Cir. 1985); *In re De Blauwe*, 736 F.2d 699, 222 USPQ 191 (Fed. Cir. 1984).

The Board's usage of the term *prima facie* was imprecise for, as discussed *supra*, the term " *prima facie* obvious" relates to the burden on the examiner at the initial stage of the examination, while the conclusion of obviousness *vel non* is based on the preponderance of evidence and argument in the record. However, it was clear that the Board did not make a new rejection. Therefore the Board did not err in declining to consider at that stage the proffered evidence of commercial success.

### II THE MERITS

Oetiker's invention is an improvement in a "stepless, earless" metal clamp, a hose clamp that was generally described in an earlier '004 patent of Oetiker, but that differs in the presence of a feature that is described as a preassembly "hook". This "hook" serves both to maintain the preassembly condition of the clamp and to be disengaged automatically when the clamp is tightened.

The cited references were Oetiker's earlier-granted '004 patent, combined with a certain Lauro '400 patent. Lauro describes a plastic hook and eye fastener for use in garments, in which "unitary tabs of sewing needle puncturable plastic material... are affixable to clothing and the like by sewing". Oetiker argues that there is no suggestion or motivation to the artisan to combine the teachings of the cited references, and that Lauro is nonanalogous art. Oetiker concludes that these references were improperly combined; that a person of ordinary skill, seeking to solve the problem facing Oetiker, would not look to the garment art for the solution. Oetiker also argues that even if combined the references do not render the claimed combination obvious.

The examiner stated that "since garments commonly use hooks for securement", a person

faced with the problem of unreliable maintenance of the pre-assembly configuration of an assembly line metal hose clamp would look to the garment industry art. The examiner explained further by stating that "Appellant's device as disclosed could be utilized as part of a garment". The Board did not repeat or support the examiner's argument, or discuss its relevance. Indeed, the argument is not supportable. However, the Board held that the Lauro reference, although not "within the appellant's specific field of endeavor" is nonetheless "analogous art" because it relates to a hooking problem, as does Oetiker's invention.

The Board apparently reasoned that all hooking problems are analogous. At least, that is the argument now pressed by the Commissioner. The Commissioner states in his brief on appeal that "A disengageable catch, such as that used by Oetiker, is a common everyday mechanical concept that is variously employed in door latches and electrical and other switches, as well as in the hook and eye apparatus disclosed by Lauro". No such references were cited, however. While this court may take judicial notice of common everyday mechanical concepts in appropriate circumstances, the Commissioner did not explain why a "catch" of unstated structure in an electrical switch, for example, is such a concept and would have made Oetiker's invention obvious. Indeed, the Commissioner did not respond to Oetiker's argument that the cited references provide no teaching or suggestion that Lauro's molded hook and eye fastener, even if combined with Oetiker's '004 clamp, would achieve Oetiker's purpose.

[4] In order to rely on a reference as a basis for rejection of the applicant's invention, the reference must either be in the field of the applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned. See In re Deminski, 796 F.2d 436, 442, 230 USPQ 313, 315 (Fed. Cir. 1986). Patent examination is necessarily conducted by hindsight, with complete knowledge of the applicant's invention, and the courts have recognized the subjective aspects of determining whether an inventor would reasonably

#### Page 1446

be motivated to go to the field in which the examiner found the reference, in order to solve the problem confronting the inventor. We have reminded ourselves and the PTO that it is necessary to consider "the reality of the circumstances", *In re Wood*, 599 F.2d 1032, 1036, 202 USPQ 171, 174 (CCPA 1979) -- in other words, common sense -- in deciding in which fields a person of ordinary skill would reasonably be expected to look for a solution to the problem facing the inventor.

It has not been shown that a person of ordinary skill, seeking to solve a problem of fastening a hose clamp, would reasonably be expected or motivated to look to fasteners for garments. The combination of elements from non-analogous sources, in a manner that reconstructs the applicant's invention only with the benefit of hindsight, is insufficient to present a *prima facie* case of obviousness. There must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge can not come from the applicant's invention itself. *Diversitech Corp. v. Century Steps, Inc.*, 850 F.2d 675, 678-79, 7 USPQ2d 1315, 1318 (Fed. Cir. 1988); *In re Geiger*, 815 F.2d 686, 687, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987); *Interconnect Planning Corp. v. Feil*, 774 F.2d

1132, 1147, 227 USPQ 543, 551 (Fed. Cir. 1985).

[5] Oetiker's invention is simple. Simplicity is not inimical to patentability. See Goodyear Tire & Rubber Co. v. Ray-O-Vac Co., 321 U.S. 275, 279, 60 USPQ 386, 388 (1944) (simplicity of itself does not negative invention), Panduit Corp. v. Dennison Mfg Co., 810 F.2d 1561, 1572, 1 USPQ2d 1593, 1600 (Fed. Cir.) (the patent system is not foreclosed to those who make simple inventions), cert. denied, 481 U.S. 1052 (1987). We conclude that the references on which the Board relied were improperly combined. Accordingly, the Board erred in holding the claims unpatentable under section 103. The rejection of claims 1-4 and 16-21 is REVERSED.

### **Footnotes**

Footnote 1. Ex parte Oetiker, No. 89-2230 (Bd. Pat App. & Interf. May 31, 1990; on reconsideration, August 23, 1990).

## **Concurring Opinion Text**

### Concur By:

Nies, C.J., concurring.

I agree with the panel decision and write only to express my understanding of the language that there must be some teaching, reason, suggestion, or motivation found "in the prior art" or "in the prior art references" to make a combination to render an invention obvious within the meaning of 35 U.S.C. Section 103 (1988). Similar language appears in a number of opinions 1 and if taken literally would mean that an invention cannot be held to have been obvious unless something specific in a prior art reference would lead an inventor to combine the teachings therein with another piece of prior art.

This restrictive understanding of the concept of obviousness is clearly wrong. Other statements in opinions express the idea more generally. We have stated, for example, that the test is: "whether the teachings of the prior art, taken as a whole, would have made obvious the claimed invention," In re Gorman, 933 F.2d at 986, 18 USPQ2d at 1888, and "what the combined teachings... would have suggested to one of ordinary skill in the art," In re Young, 927 F.2d 588, 591, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991). We have also stated that "the prior art as a whole must suggest the desirability... of making the combination." Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988); Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co., 730 F.2d 1452, 1462, 221 USPQ 481, 488 (Fed. Cir. 1984).

I believe that it would better reflect the concept of obviousness to speak in terms of "
from the prior art" rather than simply " in the prior art." The word "from" expresses the
idea of the statute that we must look at the obviousness issue through the eyes of one of
ordinary skill in the art and what one would be presumed to know with that background.
What would be obvious to one of skill in the art is a different question from what would
be obvious to a layman. An artisan is likely to extract more than a layman from reading a
reference.

In any event, variance in the language used in opinions does not change the nature of the statutory inquiry. Under section 103, subject matter is unpatentable if it "would have been obvious . . . to a person having

### Page 1447

ordinary skill in the art." While there must be some teaching, reason, suggestion, or motivation to combine existing elements to produce the claimed device, it is not necessary that the cited references or prior art specifically suggest making the combination. In re Nilssen, 851 F.2d 1401, 1403, 7 USPQ2d 1500, 1502 (Fed. Cir. 1988). Such suggestion or motivation to combine prior art teachings can derive solely from the existence of a teaching, which one of ordinary skill in the art would be presumed to know, and the use of that teaching to solve the same of similar problem which it addresses. In re Wood, 599 F.2d 1032, 1037, 202 USPQ 171, 174 (CCPA 1979). See, also, EWP Corp. v. Reliance Universal, Inc., 755 F.2d 898, 906-07, 225 USPQ 20, 25 (Fed. Cir.), cert. denied, 474 U.S. 843 (1985); In re Sernaker, 702 F.2d 989, 995, 217 USPQ 1, 6 (Fed. Cir. 1983). See also, Ex parte Clapp, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985) ("To support the conclusion that the claimed combination is directed to obvious subject matter, either the references must expressly or implicitly suggest the claimed combination or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.").

In sum, it is off the mark for litigants to argue, as many do, that an invention cannot be held to have been obvious unless a suggestion to combine prior art teachings is found in a specific reference.

#### **Footnotes**

Footnote 1. See, e.g., Symbol Technologies, Inc. v. Opticon. Inc., 935 F.2d 1569, 19 USPQ2d 1241, 1246 (Fed. Cir. 1991); In re Gorman, 933 F.2d 982, 989, 18 USPQ2d 1885, (Fed. Cir. 1991); In re Mills, 916 F.2d 680, 682, 16 USPQ2d 1430, (Fed. Cir. 1990); Smithkline Diagnostics, Inc. v. Helena Laboratories Corp., 859 F.2d 878, 887, 8 USPQ2d 1468, 1475 (Fed. Cir. 1988); In re Dow Chemical Co., 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988); In re Stencel, 828 F.2d 751, 755, 4 USPQ2d 1071, 1073 (Fed. Cir. 1987); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); In re Grabiak, 769 F.2d 729, 732, 226 USPQ 870, 872 (Fed. Cir. 1985).

## **Concurring Opinion Text**

Concur By:

Plager, J., concurring.

I join in the carefully-reasoned and well-written opinion of Judge Newman. With regard to Part I dealing with the PTO procedure, her explanation of the meaning and application of the 'prima facie case' concept should help clarify an area that remains

marked by a lack of clarity. The need for that discussion, however, illustrates the pitfalls of the 'prima facie' practice of the PTO, and the difficulties created by this particular legalistically convoluted concept.

An applicant for a patent is entitled to the patent unless the application fails to meet the requirements established by law. It is the Commissioner's duty (acting through the examining officials) to determine that all requirements of the Patent Act are met. The burden is on the Commissioner to establish that the applicant is not entitled under the law to a patent. In re Warner, 379 F.2d 1011, 1016, 154 USPQ 173, 177 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968). In rejecting an application, factual determinations by the PTO must be based on a preponderance of the evidence, and legal conclusions must be correct. In re Caveney, 761 F.2d 671, 674, 226 USPQ 1, 3 (Fed. Cir. 1985).

The process of patent examination is an interactive one. See generally, Chisum, Patents, Section 11.03 et seq. (1992). The examiner cannot sit mum, leaving the applicant to shoot arrows into the dark hoping to somehow hit a secret objection harbored by the examiner. The 'prima facie case' notion, the exact origin of which appears obscure (see In re Piasecki, 745 F.2d 1468, 1472, 233 USPQ 785, 788 (Fed. Cir. 1984)), seemingly was intended to leave no doubt among examiners that they must state clearly and specifically any objections (the prima facie case) to patentability, and give the applicant fair opportunity to meet those objections with evidence and argument. To that extent the concept serves to level the playing field and reduces the likelihood of administrative arbitrariness.

But the ultimate decision that must be made by the PTO in the examination process, and by this court on appeal, is not whether a prima facie case for rejection was made; the only question is whether, on the whole record, the applicant has met the statutory requirements for obtaining a patent. When a final rejection is described in terms of whether a prima facie case was made, that intermediate issue diverts attention from what should be the question to be decided.

Specifically, when obviousness is at issue, the examiner has the burden of persuasion and therefore the initial burden of production. Satisfying the burden of production, and thus initially the burden of persuasion, constitutes the so-called prima facie showing. Once that burden is met, the applicant has the burden of production to demonstrate that the examiner's preliminary determination is not correct. The examiner, and if later involved, the Board, retain the ultimate burden of persuasion on the issue.

If, as a matter of law, the issue is in equipoise, the applicant is entitled to the patent. Thus on appeal to this court as in the PTO, the applicant does not bear the ultimate burden of persuasion on the issue. In the end there is no reason there or here to argue over whether a 'prima facie' case was made out. The only determinative issue is whether the record as a whole supports the legal conclusion that the invention would have been obvious.

#### - End of Case -

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# In re OTTO, OTTO, AND BRITON, 136 USPQ 458 (CCPA 1963)

# In re OTTO, OTTO, AND BRITON

(CCPA) 136 USPQ 458

Decided Feb. 13, 1963
Appl. No. 6901

U.S. Court of Customs and Patent Appeals

### Headnotes

#### **PATENTS**

1. Patentability--Tests of--In general (§ 51.701)

Claims are directed to particular device and method of making that device, not to method of curling hair wherein particular device is used; hence, patentability cannot be predicated upon certain procedure for curling hair using this device and involving a number of steps in the process; cited cases deal with impropriety of relying on method concept to distinguish structural claim over prior art and indicate that inclusion of material or article worked upon by a structure being claimed does not impart patentability to claims.

Particular patents--Hair Curlers

Otto, Otto, and Briton, Hair Curlers for Permanent Waving and Manufacture Thereof, claims 1 to 4 of application refused.

## Case History and Disposition:

Page 458

Appeal from Board of Appeals of the Patent Office.

Application for patent of Carl Louis Otto, Lanelle Burnham Otto,

and Joan Briton, Serial No. 512,520, filed June 1, 1955; Patent Office Division 35. From decision rejecting claims 1 to 4, applicants appeal. Affirmed.

Attorneys:

CLARENCE M. FISHER and PENNIE, EDMONDS, MORTON, BARROWS & TAYLOR (JOHN T. ROBERTS of counsel) all of Washington, D.C., for appellants.

CLARENCE W. MOORE (JOSEPH F. NAKAMURA of counsel) for Commissioner of Patents.

Judge:

Before WORLEY, Chief Judge, and RICH, MARTIN, SMITH, and ALMOND, Associate Judges.

### **Opinion Text**

Opinion By:

MARTIN, Judge.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the Primary Examiner's rejection of claims 1-4 of appellants' application Ser. No. 512,520 filed June 1, 1955 for Hair Curlers for Permanent Waving and Manufacture Thereof.

Claims 1 and 4, illustrative of the appealed claims, read:

- 1. As a new article of manufacture, a core member for hair curlers comprising a body of elastically resilient foam material, the hair being wound directly on said body and said body carrying a hair waving lotion in non-liquid form distributed in the pores of the material.
- 4. The method of making a core member of the character described for hair curlers which comprises providing a body of elastically resilient foam material, saturating the body with a hair waving lotion consisting of a water-soluble solution of saponified material and thereafter permitting the saturated body to dry, whereby to produce a body the pores of which are substantially impregnated with a waving solution in non-liquid form adapted to be activated by subsequent wetting of the body.

The references relied on by the examiner and the board are:

Picard, 1,219,147, Mar. 13, 1917.

Banigan et al., 2,295,823, Sept. 15, 1942.

Ramsey, 2,418,664, Apr. 8, 1947.

Moses, 2,720,206, Oct. 11, 1955.

Connolly, 2,761,166, Sept. 4, 1956.

Lyons, 2,763,885, Sept. 25, 1956.

L'Oreal (France), 966,988, Mar. 15, 1950.

Appellants' application relates to a core member for hair curlers. The body of the core Copyright 2003, The Bureau of National Affairs, Inc. Reproduction or redistribution, in whole or in part, and in any form, without express written permission, is prohibited except as permitted by the BNA Copyright Policy. http://www.bna.com/corp/index.html#V

member is made up of an elastically resilient foam material, e.g. a resinous polyurethane. It can be of any suitable shape, although the drawing shows it as cylindrical. A hair waving lotion, which may be a water-soluble mixture of thioglycolic acid and ammonia, in non-liquid form, is contained in the pores of the foam material. The lotion may be deposited by first saturating the core member with the lotion in solution form and thereafter permitting it to dry.

In use, the core member may have the tresses of hair wound on it while the core and hair are both dry. After the dry hair is wound on the dry core and fixed in place by appropriate retaining means, depending on the specific construction of the curler, the curler with the hair wound on it is then thoroughly wetted and manipulated by squeezing or twisting of the core member to force the lotion from the pores of the core member outwardly to saturate the hair wound on the curler.

The Moses patent discloses a hair curler provided with an absorbent pad member in the form of a cylinder of natural sponge, viscose sponge or the like for holding a permanent wave solu

#### Page 459

tion to be squeezed out into the hair wound on the curler.

Each of the Connolly and Lyons patents relates to a core member of absorbent material provided with a dry dentifrice which is activated for use by contact with a liquid. Picard discloses a similar member impregnated with a dentifrice or antiseptic while Banigan et al. relates to sponges impregnated with numerous materials.

The Ramsey patent and the French patent to L'Oreal each discloses a cream for use in the permanent waving of hair. The cream comprises a base which may include an emulsifiable water-soluble mixture of thioglycolic acid and ammonia.

The examiner indicated that in the light of the teachings of Lyons, Picard, Connolly and Banigan et al. he did not see "that invention would be involved in providing the pores of a core, as shown in Moses, with a non-liquid lotion, to be activated by liquid at the time of use." The examiner further rejected the claims as unpatentable over any of Picard, Lyons and Banigan et al. in view of either Ramsey or L'Oreal taking the position that "it would not require invention to substitute the dry hair-waving compositions of either secondary reference for the dentifrice of each primary reference."

The board in affirming the rejection of the appealed claims stated:

\* \* \* We agree that the art used makes it obvious to incorporate in a sponge a material that has an unspecified degree of dryness (including the substantial degree of some of the art) that causes the material to be retained in the sponge and thus makes obvious doing this with hair waving material.

Appellants urge that the Moses core is not the article of manufacture which appellants claim. They contend that the Moses core is merely a wick inside of a perforated metal hair curler which when compressed will release liquid through the pores of the metal curler. Appellants also urge that the patents of Picard, Connolly and Lyons, which show a water-soluble dentifrice impregnated in a sponge body useful as a toothbrush and the Banigan et al. patent which mentions that artificial sponges may be impregnated with numerous materials "would not be reasonably expected to teach modifying the Moses

curler." Appellants further contend that the cream lotion of Ramsey and L'Oreal will not work in their invention.

[1] First of all it should be remembered that the claims are directed to a particular device and a method of making that device, not to a method of curling hair wherein this particular device is used. It seems appellants are endeavoring to predicate patentability upon a certain procedure for curling hair using this device and involving a number of steps in the process. This process is irrelevant as is the recitation involving the hair being wound around the core insofar as the determination of whether these particular claims should be allowed or rejected. In re Lampert et al., 44 CCPA 958, 245 F.2d 253, 114 USPQ 163; In re Rishoi et al., 39 CCPA 1004, 197 F.2d 342, 94 USPQ 71; In re Mulholland, 29 CCPA 1222, 129 F.2d 860, 54 USPQ 388; In re Young, 22 CCPA 1060, 75 F.2d 996, 25 USPQ 69. It will be seen that the Lampert case pertains to the impropriety of relying on a method concept to distinguish a structural claim over the prior art and Rishoi and the others indicate that inclusion of the material or article worked upon by a structure being claimed does not impart patentability to the claims.

The particular device claimed is an elastically resilient "core member for hair curlers \* \* \* carrying a hair waving lotion in non-liquid form distributed in the pores of the material." It should be noted at this point that no attaching means is recited in the claims.

Moses teaches a pad member which "is first charged with a curling liquid" to be inserted in a mandrel to be used for hair curling purposes. Picard, Banigan et al., Connolly and Lyons all teach impregnating sponge-like material with various substances for various purposes such as brushing teeth and polishing metalware. Connolly and Lyons teach impregnating a sponge-like material with *dry* substances to be activated by contact with a liquid. In view of these teachings we believe it would be within the skill of the art to apply those disclosures of Connolly and Lyons to Moses' pad. Since appellants' structure claims pertain only to a core or pad member and recite no means for attaching it to the hair, it is apparent that the invention does not distinguish over Moses' pad <sup>1</sup> in view of Connolly and Lyons insofar as the concept of impregnating the pores of a sponge-like pad with a dry substance, which pad is to be used in connection with hair curlers.

Appellants have never questioned that a hair curling composition, such as the

### Page 460

water-soluble saponified thioglycolin-ammonia mentioned in their application, can be provided in dry form. Therefore no issue arises with reference to that matter. However it should be noted that even though the creams of L'Oreal and Ramsey may contain ingredients of appellants' hair curling preparation, being in cream form, it would not be practicable to endeavor to impregnate a hair curling pad with them.

Although the structure claims do not recite any means by which the core member could be attached to the hair and thus the *manner* of its intended use is of no significance, it might be well to note that the Moses pad impregnated with a dry hair curling substance would be operable with a non-liquid solution. Thus the core could be used by dipping the mandrel containing the pad into water which would activate the hair curling substance in the pad and then the mandrel could be attached to the hair and the liquid would be

squeezed from the pad through the perforations in the mandrel into the hair by means of the plunger activity associated with the locking device. There is no significance in the fact that the Moses pad would be moistened differently than appellants' since, as stated, methods are not involved here. For these reasons we affirm the rejection of claims 1, 2 and 3.

Coming to claim 4, the only aspect of the recited method which requires additional consideration reads:

\* \* \*, saturating the body with a hair waving lotion \* \* \* and thereafter permitting the saturated body to dry, \* \* \* adapted to be activated by subsequent wetting of the body.

It does not appear to us that it would be beyond the skill of an ordinary workman in this art who desires to impregnate a foam-like material with a liquid soluble substance to prepare that substance in liquid form then saturate the material with it. Upon the material and the substance becoming dry, the substance obviously would remain in the pores of the material until it is reactivated by being wetted. We feel certain that this procedure takes place every day in the homes in this country where a housewife saturates a sponge with soapy water then permits the sponge to dry and, unless she has rinsed the sponge thoroughly, when she wets the sponge again the water squeezed therefrom will be soapy. For these reasons we affirm the rejection of claim 4.

In view of the foregoing we affirm the decision of the board.

### **Footnotes**

Footnote 1. There seems to be no contention on the part of appellants that patentability resides in the substitution of known foamed plastic in lieu of Moses' sponge material and we see none.

- End of Case -

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# In re REESE, 129 USPQ 402 (CCPA 1961)

### In re REESE

(CCPA) 129 USPQ 402

Decided June 2, 1961
Appl. No. 6660
U.S. Court of Customs and Patent Appeals

#### Headnotes

#### **PATENTS**

1. Use and sale--Character of evidence to prove (§ 69.3)

Prior public use of claimed tablets is not admitted by applicant's affidavit and accompanying exhibit which make contradictory assertions; moreover, even if affidavit and exhibit can be construed as an admission, admission is contra to positive averment by applicant in application oath; while applicant's interest should be taken into account in weighing evidence, it is not enough, alone, to support conclusion that he perjured himself in swearing there had been neither use nor sale of tablets prior to critical date.

# 2. Patentability--Invention--In general (§ 51.501)

Since improved results alleged by applicant resulted from experimentation of an obvious nature and were nothing more than one would expect, they may not be relied upon to warrant allowance of claims.

# 3. Court of Customs and Patent Appeals -- Record (§ 28.30)

Patentability -- Evidence of -- Commercial success--In general (§ 51.4551)
Solicitor's brief stated that applicant's assertion that sales of prior tablets dropped steadily was without support in record, whereupon applicant moved for leave to file memorandum and affidavit to prove decreased sales; solicitor opposed introduction of evidence which had not been before Patent Office; court holds that solicitor's position is well taken; motion is denied; claims for new tablet cannot be allowed on basis of commercial failure of old tablet; thus, additional evidence would not be pertinent to issue before court.

Particular patents--Medicinal Carrier

Reese, Medicinal Carrier, claims 39 and 40 of application allowed; claims 41 and 42 refused.

# Case History and Disposition:

### Page 402

Appeal from Board of Appeals of the Patent Office.

Application for patent of Henry W. Reese, Serial No. 392,980, filed Nov. 18, 1953; Patent Office Division 43. From decision rejecting claims 39 to 42, applicant appeals. Affirmed as to claims 41 and 42; reversed as to claims 39 and 40.

Attorneys:

ALFRED E. PAGE and BLUM, MOSCOVITZ, FRIEDMAN & BLUM, both of New York, N.Y., for appellant.

CLARENCE W. MOORE (S. WM. COCHRAN of counsel) for Commissioner of Patents.

Judge:

Before WORLEY, Chief Judge, RICH, MARTIN, and SMITH, Associate Judges, and KIRKPATRICK, Judge. \*

## **Opinion Text**

Opinion By:

SMITH, Judge.

Appellant seeks reversal of the decision of the Board of Appeals, which affirmed the examiner and held that claims 39-42, all of the claims in the case, are unpatentable over the prior art, and for the further reason that the application is barred by some twenty years of what the examiner and the board found to be prior public use.

The invention disclosed in the instant application, Serial Number 392,980, filed November 18, 1953, relates to improvements in a "Medicinal Carrier." One form of the invention, said to be especially useful, is a tablet for insertion in the vaginal cavity where, upon disintegration of the tablet, a medicinal agent, which may also be a spermicide, is released.

The assignee of the present application is Fomos Laboratories, Inc. Applicant

#### Page 403

has been associated with Fomos Laboratories, Inc., since 1936, and his affidavits of record herein establish some of the historical background of the present invention. From the affidavits we find that Fomos Laboratories, Inc., has been making and selling vaginal tablets under the name "Fomos" since 1932, and that the subject matter of the claims on appeal relates to asserted improvements in such tablets.

The affidavits also establish that the original "Fomos" tablets were compounded from the same active ingredients as the tablet disclosed in the application before us, namely: sodium bicarbonate, boric acid, tartaric acid, a memicinal agent, a foaming agent, a wetting agent, filler, and a binder. These original tablets were intended to perform their function as carriers by dissolving upon contact with the moisture of the body cavity after which a reaction of the ingredients occurred resulting in the production of a gasgenerated foam which carried the medicinal agent into contact with the walls of the body cavity.

It is asserted in the affidavits that in actual use, the original "Fomos" tablets did not always function as intended. Complaints were received from users claiming that the tablet did not dissolve, and thus was useless. Even when the tablet did dissolve, users frequently complained of a burning sensation resulting from the reaction. Moreover, reports indicated that the tablets were stable for something less than six months.

It was discovered that even with a fresh tablet, frequently there was insufficient body moisture to dissolve the tablet and permit reaction of the ingredients. It also was found that the tablet did not dissolve as rapidly as desired. Variations in the amount of body moisture available to support the desired reactions were found to be a principal reason why varying results were obtained from fresh undeteriorated tablets.

In order to assure the desired operation of the old "Fomos" tablets it was necessary to so compound them that they were readily reactive to small amounts of moisture. This resulted in the production of relatively unstable tablets which had an undesirably short shelf life. The contact of water vapor from the air caused the boric acid and tartaric acid of the tablets to react and produce more water, which, in turn, caused further interreaction of the constituents of the tablet. That reaction, for practical purposes, resulted in the deterioration of the tablets while still in the supplier's stock.

The tablets here disclosed as an improvement on the original "Fomos" tablets are asserted to have solved the problem of how to provide adequate moisture to facilitate the desired reaction under all conditions of use and yet to provide a tablet having an adequate shelf life. The tablets are said to be more sensitive to moisture under the conditions of use than were the original "Fomos" tablets and thus are said to be readily disintegrated to ensure full and rapid reaction with whatever moisture is present in the body cavity. Yet the tablet of the present invention is said to be sufficiently insensitive to moisture prior to its use so that the shelf life was doubled over that of the old "Fomos" tablets.

Applicant has changed the proportions of boric acid, tartaric acid and sodium bicarbonate in the original "Fomos" tablets to obtain the benefit of the water-producing reaction between the boric and tartaric acids. The water produced by this reaction together with the structure of the tablet are asserted to improve the solubility of the tablet.

The shelf life and stability of the tablet are asserted by applicant to result from the new tablet structure. Applicant separately coats each of the active ingredients of the

tablet with different binders, and separately granulates such coated ingredients. After drying they are formed into a single tablet. Applicant uses methyl cellulose as a coating for the tartaric acid, to provide a moisture barrier to isolate the tartaric acid from both the boric acid and the sodium bicarbonate. The sodium bicarbonate is coated with a foaming agent, and the boric acid is coated with a water solution of a common binder and the desired medicinal agent.

Since the rejection on the ground of public use goes to all the claims and the other issues relating to patentability of the claims become moot if that rejection is sustained, we shall first consider that ground. The board's finding that the tablets defined in the claims of the instant application were "in public use for twenty years prior to the filing date of the application," and were therefore not patentable under 35 U.S.C. 102(b), raises an issue of fact. The precise question is whether the evidence of record supports the finding of the board that there was public use or sale of the tablet claimed in the application prior to November 18, 1952. The only evidence of record before us is found in affidavits submitted by the applicant, which affidavits were directed primarily to the issue of utility which had been raised by the examiner. We shall review these affidavits in chronological sequence.

### Page 404

On January 17, 1955, Reuben Posner, one of the assignees of the instant application, and president of the other assignee, Fomos Laboratories, Inc., submitted an affidavit which contained the following paragraph:

I annex to this application a true copy of a report made by the Planned Parenthood Federation of America, Inc. I state that the formula of the Fomos tablet mentioned in this report is exactly the same as the formula of the tablet in the application.

In that report, under the heading "statement of background material," is the following statement:

The manufacturer reports that Fomos tablets have been used by physicians in private practice for twenty years.

On January 2, 1957, Posner submitted another affidavit, annexed to which was "Exhibit A," which appears to be the same report of the Planned Parenthood Federation of America that had been annexed to his affidavit of January 17, 1955. However, in his affidavit filed January 2, 1957, Posner stated:

The "Fomos" tablets mentioned in "Exhibit A" are the tablets disclosed in this application, and are not the tablets previously manufactured under the name "Fomos" prior to November 18, 1952.

The applicant Reese also submitted an affidavit on January 2, 1957. Reese distinguished between the "Fomos" tablets of the application and those made and sold prior to November 18, 1952, and stated that the tablet disclosed in the application never was sold in the United States of America prior to November 18, 1952. Reese also pointed out the differences between the "Fomos" tablets sold in the United States prior to November 18, 1952 and the tablets claimed in his application.

On October 3, 1957, attorneys for applicant filed an amendment in which they traversed the examiner's rejection on public use, stated that there was no such issue in the case, and explained that there are two tablets known as "Fomos" tablets, the old tablets and those of the application. An affidavit signed by Reese on September 24, 1957 was attached. In that affidavit Reese again distinguished between the old "Fomos" tablet which had been sold by Fomos Laboratories since 1934, and the "Fomos" tablet of the application, the "new" "Fomos" tablet, which had not been sold or offered for sale prior to November 18, 1952. Reese expressly traverses the examiner's finding that the "Exhibit A" statement about twenty years use by physicians referred to the "Fomos" tablets of the application.

The examiner and the board in rejecting the application as being for an invention in public use or on sale more than one year prior to the filing date of the application (35 U.S.C. 102(b)), appear to rely mainly upon the Posner affidavit filed January 2, 1957 and "Exhibit A," attached thereto, from which it is asserted that the applicant did not show

that the examiner erred in finding such public use.

[1] We find no reasonable basis for the finding that there was public use of the claimed tablets prior to November 18, 1952. If Posner's affidavit and the "Exhibit A" are taken at face value, they constitute a factual contradiction, rather than an admission. It is impossible that the same tablet could have been in use for twenty years in 1954, and was never "manufactured \* \* \* prior to November 18, 1952." Taken at face value the affidavit and "Exhibit A" seem to make these contradictory assertions. It is only by ignoring the second half of the sentence in Posner's affidavit that the Patent Office tribunals were able to construe the affidavit and "Exhibit A" as an admission of prior public use.

The brief on behalf of the Commissioner of Patents criticizes the affidavits submitted saying, "None of the affidavits includes a statement purporting to establish that the claimed tablets were not in use as opposed to being sold prior to November 18, 1952." We think this position is not warranted. The clear implication is that tablets could not be in use prior to their manufacture.

Even if the affidavit and exhibit could be construed as such an admission, such an admission is contra to the positive averment made by Reese in the oath accompanying the application. The evidence submitted subsequently seems to us to clearly support the position of Reese and not to support the position of the board. The board seems to have relied upon the alleged failure of the applicant to respond to the examiner's rejection, and indicates that applicant failed to state that the tablet of the application had never been used before November 18, 1952, and was equivocal with respect to the matter of sales prior to that date.

We do not find satisfactory support in the record for the board's position. The applicant repeatedly stated under oath that the tablets had not been sold prior to the critical date. There is nothing equivocal in those averments. In applicant's affidavit filed on January 2, 1957, each of the novel features relied upon is set forth and applicant stated under oath that each of them had never

#### Page 405

been used before the critical date. Again, these averments are completely unequivocal. While the board was correct in noting that applicant is an interested party, and while that interest should be taken into account in weighing the evidence, it is not enough, alone, to support a conclusion that he perjured himself in swearing there had been neither use nor sale of the improved tablets prior to the critical date.

Finding, as we do, that there never was an admission of use or sale prior to the critical date, and that the confusion created in the record by the language of "Exhibit A" was subsequently clarified, we reverse the rejection by the board based upon a finding of

public use.

The other ground of rejection by the board is based on finding of obviousness of the claimed invention over the prior art. (35 U.S.C. 103.) The issue thus presented is whether the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Claim 39 is as follows:

39. A dry vaginal tablet which is soluble in water; said tablet consisting substantially wholly of dry granulated sodium bicarbonate which is coated with a foaming agent; and dry granulated tartaric acid which is coated with methyl cellulose which is resistant to water vapor; and dry granulated ortho-boric acid which is intermixed with a medicinal agent in a non-toxic level of said medicinal agent; and a filler; and a wetting agent; said tablet having substantially equal ratios by dry weight of said dry granulated tartaric acid and of said dry granulated ortho-boric acid, the total weight of said dry granulated tartaric acid and of said dry granulated ortho-boric acid being substantially 52% of the weight of said tablet; the total dry weight of said granulated sodium bicarbonate and said granulated tartaric acid and said granulated ortho-boric acid being substantially 84% of the weight of said tablet.

Claim 39, while setting forth the proportion of ingredients defines the assertedly new structure of the tablet. Claim 40 is dependent upon claim 39, differing from the later only in limiting the medicinal agent to a spermicide.

Claim 41 is as follows:

41. A water-soluble dry vaginal tablet which consists of sodium bicarbonate, tartaric acid, ortho-boric acid, a filler, a wetting agent and a medicinal agent in a non-toxic level of said medicinal agent; substantially 84% by weight of said tablet consisting of sodium bicarbonate, tartaric acid and ortho-boric acid; said tablet having substantially equal weights of tartaric acid and ortho-boric acid, the total weight of said tartaric acid and said ortho-boric acid being substantially 52% of the weight of said tablet.

Claim 42 is dependent on claim 41, and like it, relies for novelty on the assertedly new proportions of the ingredients.

The references relied upon to support this rejection are as follows:

Curtis 2,382,546 Aug. 14, 1945

Lebram (Br.) 11,601 Nov. 2, 1905

Gutman, Modern Drug Encyclopedia and Therapeutic Guide, N. Y. (1934)

page 446.

Dickinson, Control of Conception, Williams and Wilkins Co., Baltimore, Md., 2d Ed. (1938) pages 74-75.

Lesser, Drug and Cosmetic Industry, Vol. 62, No. 6, (June 1948) pages 750-751.

The Gutman references discloses the ingredients of the old "Fomos" tablet. However, Gutman is silent as to the proportion of the ingredients used and as to the structure of the tablet.

The Curtis patent is relied upon for showing that a greater degree of dissociation of boric acid may be achieved by adding to the mixture tartaric acid, which increases the H ion concentration of the mixture by the formation of complex, highly ionizable substances. It was concluded by the examiner and the board that Curtis taught that the reaction between boric acid and tartaric acid had long been known to increase the solubility of the two acids.

The Dickinson publication, "Control of Conception," refers to the known spermicidal effectiveness of the medicinal agents, hydroquinone and oxyquinoline sulfate, which applicant discloses. However, since applicant disclaims any reliance upon the specific spermicides used, we see no occasion to apply this reference.

The Lebram British patent issued in 1905 relates to an improvement in effervescent mineral baths. It appears from this reference to have been common practice to make mineral baths effervescent by adding a dilute, weak acid to them, and then pouring sodium bicarbonate into the solution. However, frequently the reaction was undesirably violent. Lebram sought to control the reaction by coating the bicarbonate with

#### Page 406

a water soluble gum or resin. Thus the reaction was inhibited by the film of gum or resin which had to dissolve before the reagents could come into contact.

The Lesser article describes the use of methyl cellulose as a binder for aspirin tablets. Comparative tests with other binders ranked methyl cellulose first as to sieving, compression and disintegration, equalled only by a gum Karaya mucilage. As to disintegration, methyl cellulose compared favorably with starch because it absorbed water to produce an explosive type of disintegration.

[2] As pointed out by the board, and as shown by the record here, claims 41 and 42 cover no more than what applicant asserts to be optimum quantities of each of Gutman's three principal ingredients to achieve a stated result. Since the result sought and the ingredients used were known, we agree with the board it was within the expected skills of one having ordinary skill in this art to arrive at the optimum proportion of those ingredients. The knowledge that boric acid would react with tartaric acid tells such a person that an optimum ratio exists. In view of the prior art teachings we agree with the conclusion that the proportions of ingredients would have been obvious to a person having ordinary skill in the art at the time the invention as claimed in claims 41 and 42 was made. Since the improved results alleged by applicant resulted from experimentation of an obvious nature and were nothing more than one would expect, they may not be relied upon to warrant the allowance of claims 41 and 42. "It has been

repeatedly held that a patent should not be granted for an applicant's discovery of a result which would flow naturally from the teachings of the prior art." In re Tanczyn, 44 CCPA 764, 766, 241 F.2d 731, 112 USPQ 483, 485.

Therefore, as to claims 41 and 42, which distinguish the tablet over the prior art only by the recited proportions of ingredients and the designation of a spermicidal agent, we affirm the rejection by the Board of Appeals.

Claim 39 and its dependent claim 40, differ from claims 41 and 42 in defining details of the structure of the tablet.

The board held that since the Lebram patent suggests coating the ingredients with a binder and the Lesser article suggests using methyl cellulose, that claims 39 and 40 are drawn to an obvious, hence unpatentable, composition. But we think it is clear that applicant is claiming neither the use of binders, as disclosed by Lebram, nor the use of methyl cellulose as a binder. Applicant's invention as claimed in claims 39 and 40 is a tablet which results from the separate moistening of the ingredients with a foaming agent, methyl cellulose and a gum binder respectively, and in the separate granulation and drying of each of the three ingredients of the tablet in such a manner that when they are compounded in the tablet by means of an additional binder they can interact under the conditions of intended use to achieve the purpose of the tablet. The tablets have a lengthened shelf life during which the ingredients are protected from vapor and interaction so that their initial properties are preserved and rendered effective when used.

Lebram teaches what has been done in the old "Fomos" tablets for years, namely: to mix the dried, combined ingredients with a binder, which incidentally inhibited their desired reaction. Lesser teaches the use of methyl cellulose in place of the other binder resins suggested by Lebram. Applicant, on the other hand, has in our opinion, produced a novel combination which was unobvious to one of ordinary skill in the art. We therefore reverse the rejection of claims 39 and 40.

[3] There remains one further matter to be disposed of. In his brief the solicitor states that applicant's assertion that "the sales of said prior 'Fomos' tablets dropped steadily" was without support in the way of business records and other evidence. Whereupon applicant moved for leave to file a memorandum and affidavit to prove decrease in the sales of old "Fomos" tablets on the ground that the solicitor had raised a new issue. The solicitor opposed the introduction of evidence which had not been before the Patent Office.

The solicitor's position on this point is well taken and applicant's motion is denied. No claims for the new "Fomos" tablet can be allowed on the basis of the commercial failure of the old "Fomos" tablet, and thus the additional evidence would not be pertinent to the issues here before the court.

The decision of the board is reversed as to its rejection of all claims on the ground of prior public use or sale and as to its rejection of claims 39 and 40. It is affirmed as to the rejection of claims 41 and 42 on the prior art.

Footnote \* United States Senior Judge for the Eastern District of Pennsylvania, designated to participate in place of Judge O'CONNELL, pursuant to provisions of Section 294(d), Title 28, United States Code.

- End of Case -

**Intellectual Property Library** 

# In re REVEN, 156 USPQ 679 (CCPA 1968)

### In re REVEN

(CCPA) 156 USPQ 679

Decided Mar. 7, 1968
Appl. No. 7875
U.S. Court of Customs and Patent Appeals

### Headnotes

#### **PATENTS**

### 1. Patentability — Change — Size or strength (§ 51.261)

Although range of particle size disclosed in reference envelops range claimed by applicant, applicant has produced no evidence tending to show superior results because of his selection of narrower range within disclosed range; absent a contrary showing, discovering particular ranges within range disclosed by prior art is within skill of the art.—In re Reven (CCPA) 156 USPQ 679.

## 2. Patentability — Invention — In general (§ 51.501)

## Patentability — Invention — Law or fact question (§ 51.507)

Factual difference between claimed invention and reference must be considered before reaching legal conclusion of obviousness or nonobviousness under 35 U.S.C. 103; it is not sufficient to say that difference is a mere matter of degree; however, burden of establishing significance of differences in evaluating obviousness of invention as a whole falls on applicant.—In re Reven (CCPA) 156 USPQ 679.

## Particular patents—Silica Sols

Reven, Concentrated Silica Sols, claims 1 to 3 of application refused.—In re Reven (CCPA) 156 USPQ 679.

## Case History and Disposition:

#### Page 679

Appeal from Board of Appeals of the Patent Office.

Application for patent of Lewis E. Reven, Serial No. 185,840, filed Apr. 9, 1962; Patent Office Group 150. From decision rejecting claims 1 to 3, applicant appeals. Affirmed.

Attorneys:

MARZALL, JOHNSTON, COOK & ROOT, RICHARD L. JOHNSON, and HERBERT B. KEIL, all of Chicago, Ill., for appellant.

JOSEPH SCHIMMEL (JACK E. ARMORE of counsel) for Commissioner of Patents.

Judge:

BEFORE WORLEY, Chief Judge, RICH, SMITH, and ALMOND, Associate Judges, and KIRKPATRICK, Judge. \*

## **Opinion Text**

Opinion By: SMITH, Judge.

The sole issue for adjudication on the present record is whether appellant's claimed invention is obvious under 35 U.S.C. 103 in view of the cited prior art.

The issue arises in an appeal from the decision of the Patent Office Board of Appeals, adhered to on reconsideration, affirming the examiner's rejection of all of appellant's claims. <sup>2</sup>

The invention relates to a process for preparing stable and highly concentrated aqueous silica sols. Appellant explains that silica sols contain discrete particles of colloidal silica, SiO 2, dispersed in a liquid phase such as water. Appellant theorizes that the silica includes a plurality of functional hydroxide groups which are extremely reactive and tend to form links with other particles to produce a three-dimensional cross-linked polymer. In time, the colloidal particles aggregate and convert the sol into an undesirable gel, particularly when the sol is concentrated.

It is appellant's aim to produce sols of higher concentrations of colloidal silica yet having greater stability against gelation than conventional sols of lower concentrations. Appellant explains that a number of factors affect the gel forming tendencies of these sols, e.g., the concentration of the particular sol, its pH, the presence of impurities, the size of the particle, the SiO 2to Na 2O ratio, and the specific conductance of the sol.

The gist of appellant's invention resides in the discovery that the pH of the sol and the particle size of the dispersed particles are of primary importance in determining its Copyright 2003, The Bureau of National Affairs, Inc. Reproduction or redistribution, in whole or in part, and in any form, without express written permission, is prohibited except as permitted by the BNA Copyright Policy. http://www.bna.com/corp/index.html#V

stability.

Appellant's specification states:

\* \* \* The particle size should be between about 15 and 30 millimicrons, and the pH should be between about 8.7 and 9.5. Although the concen

### Page 680

tration of the sol can vary somewhat, the invention is particularly directed to sols having an SiO 2content of from 48% to 52%. My preferred sol has an average particle diameter of from 18 to 24 millimicrons and a pH from about 8.7 to about 9.2. The SiO 2:Na 2O ratio of the sols should be between about 150:1 to 350:1 and preferably from about 200:1 to about 250:1.

The method used to concentrate the sol can consist of merely boiling off water. The particle size of the sol before the boiling off step, however, should be between about 15 and 30 millimicrons. Ordinarily, the sol will have an SiO 2concentration of from about 30% to about 38%. The pH of the final product must be from about 8.7 to about 9.5.

Appellant's specification further states that the prior art processes are not satisfactory to produce a stable sol having a concentration of greater than about 40% to 45% of dispersed particles, while appellant's product was found to be "highly stable" at concentrations "as high as 52%."

Three independent claims have been appealed. Claim 1 is illustrative:

1. A process for preparing a stable and concentrated silica sol which comprises preparing an aqueous silica sol containing from about 30% to about 38% SiO 2, said sol having a particle size of from about 15 to about 30 millimicrons, an SiO 2to Na 2O ratio of from about 150:1 to 350:1, and a specific conductance greater than 4 '10 -4mho/cm. at 28°C. and 10% SiO 2, boiling off water from said sol until the SiO 2content of the sol is from about 48% to about 52%, and thereafter adjusting the pH of said sol to between about 8.7 and about 9.5.

Claims 2 and 3 more specifically limit the particle size to from about 18 to about 24 millimicrons and the pH to between about 8.7 and 9.2. Claim 3 also further limits the SiO 2to Na 2O ratio to from about 200:1 to 250:1.

The Patent Office relied upon the following patents to sustain the rejection:

Rule 2,577,485 Dec. 4, 1951

Wolter (Canadian) 521,741 Feb. 14, 1956

The Rule patent describes a process for making stable silica sols in which a silica sol is first prepared containing dense, non-agglomerated silica particles having an average diameter of from 10 to 130 millimicrons, and a specific conductance less than 4 '10-4mho/cm. at 28°C. and 10% SiO 2. In preparing the sol to be treated, the Rule process includes the formation of a low molecular weight sol by a known process in which a sodium silicate solution is passed through an ion exchange material to remove most of the sodium ions and provide a silica sol having a high ratio of silica to sodium. The sol is then concentrated by another known method in which the silica particles are allowed to Copyright 2003, The Bureau of National Affairs, Inc. Reproduction or redistribution, in whole or in part, and in any form, without express written permission, is prohibited except as permitted by the BNA Copyright Policy. http://www.bna.com/corp/index.html#V

grow to a diameter of from 10 millimicrons to about 130 millimicrons. The ion content of a sol thus produced results in a specific conductance greater than 4 x 10 -4mho/cm. at 28°C. and 10% SiO 2. Rule teaches that the ion content of the sol must be decreased, preferably by passing it through a cation exchanger. The use of an anion exchanger to remove anions is also said by Rule to be desirable.

An alkali metal hydroxide is added to the sol in an amount sufficient to provide a silica to alkali oxide mole ratio in the sol of from 130:1 to 500:1. These sols are said to be indefinitely stable at ordinary temperatures against gelation and stable for extended periods even at temperature as high as 95°C.

Rule teaches that the aqueous sols may be concentrated to a very high silica content merely by boiling off water and that stable sols containing silica in proportions as high as "50% by weight or more" may be prepared. Rule points out that in a specific embodiment giving especially advantageous results, the average particle size is from 15 to 30 millimicrons and, in one example, employed a starting sol containing 28.73% SiO 2.

The Wolter patent discloses a process for producing stable silica sols in which a sol containing from 20 to 35% SiO 2, having an average diameter of 10 to 150 millimicrons, is purified by 2 to 4 treatments with an anion exchanger and, preferably, also with a cation exchanger. The purified sol may be made more stable by the addition of ammonia, amines or strong acids. Wolter explains that the stability is less for the sols of higher concentrations, i.e., 30% and greater. According to Wolter, a 30% sol could be stabilized with ammonium hydroxide or with any organic nitrogen base which would not be objectionable in the particular use for which the sol is to be employed. The amount of organic nitrogen base or of ammonium hydroxide to use is the quantity required to raise the pH of the sol to a value from about 7 to 10 and preferably to values in the upper portions of this range. Wolter states that

#### Page 681

such sols may be stable for years at room temperature.

The patentee adds that, in a preferred sol, the particles have "an average diameter in the range of from 15 to 30 millimicrons," and that the "conductance of the completely deionized sols is less than 4 times 10 -4mho/cm. at 28°C. and 10% SiO 2." Instead of stabilizing the sol with a base, Wolter states that it may be stabilized with a small amount of an acid.

The examiner finally rejected all of appellant's claims as "unpatentable over Rule, alone or in view of Wolter." The board affirmed, stating:

The claims stand rejected as unpatentable over Rule, alone or in view of Wolter under 35 U.S.C. 103. The examiner holds the claims are substantially met by Rule who subjects an aqueous silica sol substantially similar to that recited in the claim to a concentration step of boiling off water to produce a stable and concentrated silica sol within the proportions of silica claimed. He considers the specific conductance of appellant's starting material to differ merely in degree as compared with the starting material of the reference which has a conductance less than that recited and that the final adjustment of the concentrated silica sol to the designated pH to be [sic] obvious and within the skill of the art, relying on Wolter

to show pH adjustment to the alkaline side for stabilizing silica sols.

\* \* \* While appellant lays great emphasis on the fact that he does not use the ion exchange resin treatments used by the references, yet the claims do not exclude such treatment. The starting silica sol used by appellant does not appear to be materially different from that of Rule who uses a sol of 28.73% SiO 2, which is very close to the 30% recited in the claims.

We are not satisfied that the difference in the specific conductance of appellant's sol, which is greater than the standard recited while the reference is less than the standard, can in any way be regarded as a patentable distinction. At best, it appears to be a mere matter of degree. Furthermore, the fact that Rule obtains a final product which is just about as stable as appellant's and of substantially the same concentration, leads to the conclusion that the specific conductance used is of no patentable significance. We agree with the examiner that the adjustment of pH as the final step would be obvious and within the skill of the art.

Appellant here urges, as he did below, that the claimed process produces unobvious results. He further argues that it could not possibly have been predicted that, by carefully controlling the characteristics of an intermediate or charge sol and by adjusting the pH of the final product within a narrow range, a highly concentrated stable silica sol could be produced. Appellant emphasizes that, in both the Rule and Wolter processes, it is necessary to treat the sol with an ion exchanger.

The factual differences between the appealed claims and the prior art must first be determined, 35 U.S.C. 103. Appellant's charge sol has an SiO 2concentration of from about 30% to about 38%; Rule discloses a sol having an SiO 2concentration of 28.73%. We note that appellant does not emphasize this difference before this court.

- [1] Appellant claims a particle size of from about 15 to about 30 millimicrons. Rule discloses a much broader range, i.e., from 10 to 130 millimicrons, but states that in a specific embodiment giving "especially advantageous results," the average particle size is from 15 to 30 millimicrons. Similarly, Rule discloses a silica: alkali oxide mole ratio of 130:1 to 500:1, while appellant claims a SiO 2:Na 2O ratio of 150:1 to 350:1. We think it sufficient to note that the range disclosed in Rule envelops the range claimed by appellant, and that appellant has produced no evidence tending to show superior results because of his selection of the narrower range within the disclosed range. The examiner noted, and we agree that, absent a showing to the contrary, discovering particular ranges within a range disclosed by the prior art would be within the skill of the art.
- [2] Appellant claims a specific conductance of the charge sol greater than 4 10 4mho/cm. at 28° C. and 10% SiO 2. Rule discloses that a specific conductivity less than 4 10 4mho/cm. is preferred for the higher concentration of SiO 2. The board considered this difference to be "at best \* \* \* a mere matter of degree." This difference, however, is a factual difference which must be considered before reaching the legal conclusion of obviousness or nonobviousness under section 103. In re Krazinski, 52 CCPA 1447, 347 F.2d 656, 146 USPQ 25 (1965).

Appellant makes the related argument here that his claimed process produces sols which are "as stable" as those of Rule, without requiring a deionization step. This fact, in

appellant's view,

#### Page 682

"provides the ingredient of unobviousness which makes the claims patentable over the art." Similarly, at oral argument, counsel for appellant urged that the claimed specific conductance is higher than that preferred by Rule to emphasize that appellant's process does not require a deionization step. Rule, however, teaches that the specific conductance of the sol is a function of deionization. More precisely, the specific conductance of the sol becomes lower as the cation and anion content of the sol is reduced.

Thus, the substance of appellant's argument is predicated upon an allegation that he achieves the same result as disclosed in the Rule reference without utilizing the step of deionization. We agree with the solicitor, however, that appellant's position is not supported by probative evidence in this record. The relevant disclosures in the Rule patent and in appellant's application as to stability of the sols provides support for the position of the solicitor that the appellant's sols have not been shown to be as stable as those produced by the Rule process. Thus, the position of the Patent Office is supported by the disclosures of the cited references. While we recognize certain factual differences between the claimed invention and the Rule disclosures, the burden of establishing the significance of such differences in evaluating the obviousness of the invention as a whole falls on the appellant. Appellant's failure to go forward with convincing proofs factually supporting this argument removes this question from the case.

Finally, appellant urges that the board erred in considering that adjustment of pH as claimed by appellant would be obvious. However, appellant has presented no persuasive argument which convinces us of error by the board in this respect. Wolter's disclosure is a clear teaching that, to be highly stable, a silica sol should have its pH adjusted to a value from about 7 to 10, but preferably values in the upper portions of this range which very nearly coincide with the claimed range.

Based upon the factual differences between appellant's claimed invention and the prior art evidenced by Rule and Wolter, we, like the examiner and the board, are not persuaded on this record that those differences are such that the claimed invention, considered as a whole, would have been unobvious under 35 U.S.C. 103.

The decision of the board is therefore affirmed.

#### **Footnotes**

Footnote 1. The board consisted of Messrs. Rosa, Examiner-in-Chief, and Stone and Vertiz, Acting Examiners-in-Chief. We note that the composition of the board is such that more than one Acting Examiner-in-Chief participated in this decision. For the view of the majority on such boards, as well as the views of Almond, J., and myself, see In re Wiechert, 54 CCPA 957, 370 F.2d 927, 152 USPQ 247 (1967). While I continue to question the legality and jurisdiction of a board so constituted, neither issue was raised by appellant nor considered below. While I doubt that this can constitute a waiver of the jurisdictional defect, a majority of the court considers it to be otherwise, hence my participation in this decision.

Footnote 2. Application Serial No. 185,840, filed April 9, 1962, for "Concentrated Silica Sols," denominated a continuation-in-part of appellant's copending application, Serial No. 23,358, filed April 20, 1960.

Footnote \* Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

- End of Case -

**Intellectual Property Library** 

# In re Rose, 105 USPQ 237 (CCPA 1955)

### In re Rose

# (CCPA) 105 USPQ 237

Decided Mar. 22, 1955
Appl. No. 6080
U.S. Court of Customs and Patent Appeals

#### Headnotes

#### **PATENTS**

- 1. Patentability Change Size or strength (§ 51.261) Size of article ordinarily is not matter of invention.
- 2. Court of Customs and Patent Appeals Issues determined Ex parte patent cases (§ 28.203)

Since one rejection must be sustained, it is unnecessary for court to discuss another rejection.

3. Patentability-In general (§ 51.01)

Feature upon which applicant predicates patentability must not only be disclosed in specification but also brought out or recited in claims.

- 4. Patentability-In general (§ 51.01)
- Patentability-Invention-In general (§ 51.501)

Novel concept, per se, is not conclusive of invention; everything which is novel is not patentable, because, in addition to being novel and useful, device must involve invention.

5. Patentability-Aggregation or combination-Of old elements (§ 51.159)

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unobvious and unexpected result.

6. Patentability-Evidence of-Commercial success-Doubtful cases (§ 51.4557) Where there is doubt as to whether invention exists, extensive use and commercial success may be considered to resolve question in favor of applicant; however, evidence of commercial success may be controlling only where issue of patentability is otherwise doubtful.

Particular patents-Lumber Package

Rose, Package of, Apparatus for Packaging and Method of Handling and Storing Lumber, claims 29 to 33 of application refused.

### Case History and Disposition:

Page 238

Appeal from Board of Appeals of the Patent Office.

Application for patent of Daniel Morton Rose, application, Serial No. 190,625; Patent Office Division 40. From decision rejecting claims 29 to 33, applicant appeals. Affirmed.

Attorneys:

- J. Preston Swecker (William L. Mathis of counsel) both of Washington, D.C., for appellant.
  - E. L. Reynolds (H. S. Miller of counsel) for Commissioner of Patents.

Judge:

Before Garrett, Chief Judge, and O'Connell, Johnson, Worley and Cole, Associate Judges.

## **Opinion Text**

Opinion By:

Johnson, Judge.

This is an appeal from the decision of the Board of Appeals of the United States Patent Office affirming the holding of the Primary Examiner rejecting as unpatentable claims 29 to 33, the only remaining claims in appellants application for a patent on a "Package of, Apparatus for Packaging and Method of Handling and Storing Lumber."

The appealed claims relate to a lumber package which is composed of individually banded bundles of lumber which vary in length. Each individual bundle of lumber consists of layers of strips of lumber which are approximately the same length. Each layer consists of a plurality of strips of lumber. These individually banded bundles, which vary in length, are arranged in superposed relationship so that the longer bundles form the base of a stacked arrangement of bundles, and the shorter bundles rest on the longer bundles and on each other. The bundles are arranged in layers of uniform width and depth with a plurality of bundles in each layer. The topmost of the stacked arrangement may be long bundles or short bundles. The stack of bundles thus formed is secured with a plurality of bands, which extend transversely to the length dimension of the bundles. These bands bind said bundles together and form a package. Some of the claims recite the presence of runners beneath the package. These runners extend transversely to the length of the package and are held to the package by the aforementioned bands which bind the package. The runners serve the purpose of supporting the package in elevated position above the surface upon which it rests.

Claims 29, 30, and 31, which are representative of the appealed claims, read as

follows:

- 29. As an article of manufacture, a lumber package comprising a plurality of bundles, each bundle including a plurality of strips of lumber, a band encircling the strips of each bundle, the plurality of bundles being arranged in superposed relation, and a plurality of bands encircling the plurality of bundles and spaced apart lengthwise of the strips, at least one of the bundles at the bottom portion of the package and another of the bundles adjacent the top of the package each having the strips thereof extending throughout the length of the package between a plurality of the last-mentioned bands, and at least some of the bundles between said long-strip bundles being spaced apart lengthwise of the package within the respective bands thereof and comprising short strips appreciably shorter than said long strips.
- 30. As an article of manufacture, a lumber package comprising a plurality of bundles of uniform width and depth, each bundle including a plurality of layers of strips of lumber, each layer comprising a plurality of strips lying side by side, a band encircing [sic] the strips of each bundle, the plurality of bundles being arranged in superposed relation, and a plurality of bands encircling the plurality of bundles and spaced apart lengthwise of the strips, at least one of the bundles at the bottom portion of the package and another of the bundles adjacent the top of the package each having the strips thereof extending throughout the length of the package between a plurality of the last-mentioned bands, and runners beneath the package extending transversely thereof between

### Page 239

the last-mentioned bands and the lowermost bundles supporting the latter in elevated position.

31. As an article of manufacture, a lumber package comprising bundles, each bundle including a plurality of layers of strips of lumber, each layer

comprising a plurality of strips lying side by side, a band encircling the strips of each bundle, said bundles being arranged in a multiplicity of layers with more than two bundles in each layer lying side-by-side in edge-to-edge relation, and each of a plurality of the layers having the bundles thereof spaced apart lengthwise thereof in end-to-end relation, and a plurality of bands encircling said bundles and spaced apart lengthwise of the strips, a plurality of the bundles at the bottom portion of the package each having the strips thereof extending throughout the length of the package between a plurality of the last-mentioned bands, and runners beneath the package extending transversely thereof between the last-mentioned bands and the lowermost bundles supporting the latter in elevated positions, the strips of each bundle being of appreciable width and thickness and each bundle being of appreciable length cooperating in the multiplicity of bundles to provide a composite package of appreciable size and weight requiring handling by a lift truck.

The references relied on by the Patent Office are:

Denison, 1,600,720, Sept. 21, 1926. Wheless, 1,766,317, June 24, 1930. Chambers, 2,012,220, Aug. 20, 1935. Owens, 2,287,056, June 23, 1942. Ott, 2,328,356, Aug. 31, 1943.

The Denison patent discloses a lumber package which consists of layers of wood which are bound transversely to their length by bands formed of metal. Each layer consists of a plurality of strips of lumber. The following portion of the Denison specification is deemed to adequately describe the structure of the Denison lumber package:

\* \* \* One or more of the lower layers and of the upper layers are preferably formed of pieces which are of the full length of the package. The intermediate layers are made of pieces of full length or of any length which will produce the full length of the package, pieces being selected which will, when laid in position end to end, make the full length or eight feet. Thus two pieces or several pieces may be placed end to end to make the full length. This is the preferred way. But spaces may be left between the ends of the short pieces. That will require more layers to give the package the chosen number of lineal feet of boards.

The Wheless patent discloses a package for knocked down window screen frames. Some of the knocked down pieces of a window screen frame are of different length from other pieces. All of the pieces having one length are wrapped in one bundle. The pieces having another length are wrapped in another bundle. These two bundles are then encircled by strips of paper which hold the individual packages together.

The Chambers patent discloses a method for storing and dispensing lumber. The portion of this patent which is pertinent to the present case shows layers of strips of lumber of equal length fastened by cleats or binder bands to form a plurality of bundles. Each layer consists of a plurality of strips. The bundles are stacked on top of each other. A plurality of bundles in stacked relationship are capable of being handled by a crane.

The Owens patent relates to the packaging of steel sheet material. The portion of this patent which is pertinent to the patent application before us discloses sheets of metal of

equal length stacked on a plurality of spaced blocks which are positioned with their longitudinal axes extending transversely to the length of of the sheets. Steel bands encircle both the blocks and sheets to form a bundle. A plurality of bundles formed in this manner are stacked on top of each other and fastened together by means of two bands to form a package. One of the last mentioned bands encircles the package in a transverse direction, and the other in a longitudinal direction.

The Ott patent also discloses a package of strip metal. The package consists of a plurality of individually bound bundles of sheets of equal length fastened together by means of steel bands wrapped transversely around the plurality of individually bound bundles of sheets to form a package. Interposed between the aforementioned steel bands and said plurality of bundles, on the upper and lower surfaces of the package, are a number of wooden cleats or blocks which extend transversely of said bundles.

The application involved in this appeal has been before the Board of Appeals of the Patent Office twice. In the first appeal, the Board of Appeals rendered a decision on February 27, 1953, in which it affirmed the decision of the Primary Examiner in which he rejected claims 18 through 30, 32 and 33. Claim 31, prior to the decision of the Board of Appeals, had been allowed by the Primary Examiner in a different form from which it appears above. However, the

#### Page 240

Board of Appeals rejected claim 31 under the provisions of Patent Office Rule 196(b) 1 on the ground that it did not patentably differentiate from another of the rejected claims. The application was then remanded to the Primary Examiner. Claim 31 was amended by applicant, placed in the condition in which it appears above, and was subsequently rejected by the Primary Examiner. The appellant then appealed to the Board of Appeals from the rejection of claim 31, as amended, and also requested that the board reconsider its previous decision relative to the affirmance of the examiner's rejection of claims 29, 30, 32, and 33. The Board of Appeals rendered its second decision on July 21, 1953, in which it affirmed the Primary Examiner's rejection of claim 31. The board also reviewed its previous decision which pertained to claims 29, 30, 32, and 33, but stated that it could find no reasons for changing or modifying its previous decision. Thus claims 29 through 33 are before us because of an adverse decision on patentability by the Board of Appeals.

The Board of Appeals affirmed the examiner's rejections of claim 31 on (1) Denison in view of Wheless, Ott, Chambers, and Owens, and (2) on Denison in view of Wheless and Ott. The substance of the second of the above rejections is best stated by quoting directly from the board's decision as follows:

\* \* \* It would not be invention to separate the random length lumber strips of Denison into bundles of approximately equal length with each bundle tied separately and all the bundles tied together in a package after the teaching of Wheless. Nor would it be invention to provide transverse runners on the package of Denison after the teaching of Ott. It is noted that Denison teaches that 'one or more' of the upper and lower layers may be formed of pieces which are the full length of the package (see specification, page 1, lines 87-99) and it would not be invention to form these full length layers as separate bundles, if desired. The

number of strips in a bundle, the number of bundles in a layer, the number of layers of bundles and the relative dimensions of the strips, the bundles and the package are all deemed matters of choice involving differences in degree and/or size and [are] not patentable distinctions, \* \* \*

Appellant argues that this claim recites that the package is of appreciable size and weight so as to require handling by a lift truck whereas Wheless and Denison packages can be lifted by hand. We do not feel that this limitation is patent-

- [1] ably significant since it at most relates to the size of the article under consideration which is not ordinarily a matter of invention. In re Yount, 36 C.C.P.A. (Patents) 775, 171 F.2d 317, 80 USPQ 141. Notwithstanding appellant's arguments, we feel that this sec-
- [2] ond rejection is sound. Since the second rejection must be sustained, we deem it unnecessary to discuss the first of said above rejections. In re Hall, 41 C.C.P.A. (Patents) 759, 208 F.2d 370, 100 USPQ 46.

The examiner's rejection of claim 29, which was affirmed by the board, is that it stands rejected on Denison in view of Wheless. Since the reasoning behind this rejection is similar to the reasoning of the rejection of claim 31, as stated above, we do not feel that it is necessary to repeat the rejection here. We agree with the board's holding.

The examiner rejected claims 30, 32, and 33 on Chambers in view of Owens and on Owens in view of Chambers with the addition of Ott; the board affirmed this rejection. These three claims are substantially similar in scope, and claim 30, supra, is considered representative of this group. The substance of the rejection is that it would not be invention to join a plurality of the bundles of Chambers into a package by means of one or more transverse tie bands, after the teaching of Owens, and it would not be invention to omit the intermediate runners of Owens or Chambers and their function, if desired, and to secure the bottom runners separately to the pack

#### Page 241

age by means of the package tie bands after the teaching of Ott. It is to be noted that the Chambers and Owens patents disclose packages which contain bundles of strips of material of equal length, as described above. Appellant states that his package consists of bundles of shorter and longer length. However, it can readily be seen that claim 30 (which is representative of the group consisting of claims 30, 32, and 33) does not recite that some of the bundles are of shorter length than other bundles. We feel that these claims are not patentable

[3] over the applied references since the particular feature upon which an applicant predicates patentability must not only be disclosed in the specification but also brought out or recited in the claims. In re Richards, 38 C.C.P.A. (Patents) 900, 187 F.2d 643, 89 USPQ 64. It is to be noted further that claim 30 recites "a lumber package comprising a plurality of bundles of uniform width and depth, each bundle including a plurality of layers of strips of lumber, each layer comprising a plurality of strips side by side." The chambers patent discloses this structure. We are therefore in agreement with the Board of Appeals on their holding relative to claims 30, 32, and 33.

Appellant makes many arguments that his claims are patentable. These arguments in

essence are:

- (1) The patent application discloses a novel concept which is not taught by the prior art; therefore, the claims should be deemed patentable notwithstanding the simplicity of the structure.
- (2) Since there has been commercial success, trade adoption, and imitation of the instant lumber package, as evidenced by an affidavit submitted during the prosecution of the application before the Patent Office, the claims should not be rejected in the absence of clear proof that they are anticipated or clearly invalid.
- [4] Relative to appellant's first argument, we do not feel that a novel concept, per se, is conclusive of invention. It is quite evident that everything which is novel must be based on a novel concept. However, it is well settled that everything which is novel is not patentable, because, in addition to being novel and useful, the device sought to be patented must involve invention. In re Corbett, 31 C.C.P.A. (Patents) 1077, 142 F.2d 78, 61 USPQ 361. In re Green, 25 C.C.P.A. (Patents) 1143, 97 F.2d 130, 37 USPQ 690. Thus appellant's argument that he has presented a novel concept is not persuasive as to the patentability of his claims since, in our opinion,
- [5] there is no invention involved in combining, in appellant's structure, the various known elements and features of the cited prior art in such a manner that these elements and features perform in combination the same function as set forth in said prior art without giving an unobvious and unexpected result. In re Lindberg, 39 C.C.P.A. (Patents) 866, 194 F.2d 732, 93 USPQ 23.
- [6] We now come to appellant's second argument, which relates to the commercial success of his lumber package, as evidenced by the aforementioned affidavit. It is well settled that where there is a *doubt* as to whether invention exists in an item sought to be patented that extensive use and commercial success may be considered to resolve the question of patentability in favor of the applicant for a patent. In re Hock, 35 C.C.P.A. (Patents) 1235, 168 F.2d 540, 78 USPQ 75. However, it is equally well settled that evidence of commercial success may be controlling only where the issue of patentability is otherwise doubtful. In re Renstrom, 36 C.C.P.A. (Patents) 1020, 174 F.2d 140, 81 USPQ 390. In re Gillette, 36 C.C.P.A. (Patents) 1172, 175 F.2d 787, 82 USPQ 196. In the present case, we feel that there is no doubt that invention is lacking. Therefore, we feel that the arguments relative to commercial success are not persuasive toward allowance of the claims.

It is to be noted in this respect, however, that appellant points out that there was a conflict to opinion in the Patent Office relative to the allowability of claim 31, as discussed above. It would seem that any doubt as to the allowability of claim 31 was solely on the part of the examiner, but this doubt was resolved overwhelmingly against patentability by the Board of Appeals. We have no doubt that claim 31 does not contain patentable subject matter, and we therefore consider the commercial success of the lumber package under consideration to be immaterial with respect to patentability.

For reasons hereinbefore stated, the decision of the Board of Appeals is affirmed.

#### **Footnotes**

Footnote 1. Rule 196(b) Should the Board of Appeals have knowledge of any grounds

not involved in the appeal for rejecting any claim, it may include in its decision a statement to that effect with its reasons for so holding, which statement shall constitute a rejection of the claims. The appellant may submit an appropriate amendment of the claims so rejected or a showing of facts, or both, and have the matter reconsidered by the primary examiner. The statement shall be binding upon the primary examiner unless an amendment or showing of facts not previously of record be made which, in the opinion of the primary examiner, avoids the additional ground for rejection stated in the decision. The applicant may waive such reconsideration before the primary examiner and have the case reconsidered by the Board of Appeals upon the same record before them. Where request for such reconsideration is made the Board of Appeals shall, if necessary, render a new decision which shall include all grounds upon which a patent is refused. The applicant may waive reconsideration by the Board of Appeals and treat the decision, including the added grounds for rejection given by the Board of Appeals, as a final decision in the case.

- End of Case -

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# In re Woodruff (CA FC) 16 USPQ2d 1934 In re

# Woodruff

# U.S. Court of Appeals Federal Circuit 16 USPQ2d 1934

Decided November 20, 1990 No. 90-1095

#### Headnotes

#### **PATENTS**

1. Patentability/Validity - Obviousness - In general (§ 115.0901)

### JUDICIAL PRACTICE AND PROCEDURE

Procedure - Judicial review - Standard of review - Patents (§ 410.4607.09)

Patent and Trademark Office's obviousness determination is reviewed de novo on appeal, while factual findings are reviewed under clearly erroneous standard.

#### **PATENTS**

2. Patentability/Validity - Obviousness - Relevant prior art - Particular Copyright 2003, The Bureau of National Affairs, Inc. Reproduction or redistribution, in whole or in part, and in any form, without express written permission, is prohibited except as permitted by the BNA Copyright Policy. http://www.bna.com/corp/index.html#V

inventions (§ 115.0903.03)

### Patentability/Validity - Obviousness - Evidence of (§ 115.0906)

Claimed method of preserving refrigerated fruits and vegetables is obvious in view of prior art method for preventing deterioration of refrigerated vegetables, even though application discloses new benefit of fungal growth inhibition and slightly different range of carbon monoxide concentrations used in atmosphere in which fruits and vegetables are stored, since benefit of preventing fungal growth is at least generically encompassed within prior art's purpose of preventing deterioration of leafy and head vegetables, and since applicant's test results fail to establish that carbon monoxide concentration range claimed in application achieves unexpected results relative to prior art range and that claimed range is therefore critical to fungal growth inhibition.

### Case History and Disposition:

Page 1934

Appeal from the U.S. Patent and Trademark Office, Board of Patent Appeals and Interferences.

Patent application of Richard E. Woodruff, serial no. 741,610 (method for inhibiting fungal growth on fresh fruits and vegetables). From decision of Board of Patent Appeals and Interferences upholding examiner's rejection of claims 27-34, applicant appeals. Affirmed.

Attorneys:

Patrick F. Bright, of Bright & Lorig, Los Angeles, Calif., for appellant.

Richard E. Schafer, associate solicitor (Fred E. McKelvey, solicitor, with him on brief), for appellee.

Judge:

Before Rich and Plager, circuit judges, and Conti, senior district judge (Northern District of California, sitting by designation).

### **Opinion Text**

Opinion By: Rich, J.

Woodruff appeals from the September 7, 1989 decision of the Patent and Trademark Office (PTO) Board of Patent Appeals and Interferences (Board), Appeal No. 86-2814, affirming the rejection of claims 27-34 in Ser. No. 741,610 as unpatentable under 35 U.S.C. §103. We affirm.

#### **BACKGROUND**

Woodruff's patent application is entitled "Method for Inhibiting Fungal Growth on Refrigerated Fresh Fruits and Vegetables." It discloses that the growth of fungi on fresh fruits and vegetables can be greatly reduced by storing the vegetables in a specified modified atmosphere. This atmosphere differs from ordinary air primarily in the decrease in the amount of oxygen present and an increase in the amount of carbon monoxide.

Although claims 27-34 are appealed, we need consider only independent claims 27 and 31 since Woodruff does not here argue, nor did he argue to the Board, that the dependent claims are separately patentable. Claim 27 reads:

27. A process for inhibiting the growth of fungi on fresh leafy and head vegetables comprising maintaining said fresh leafy and head vegetables in modified gaseous atmosphere including carbon dioxide in an amount from 0 to about 20% by volume, molecular oxygen in an amount of about 1% to about 20% by volume, carbon monoxide in an amount of about 3% to about 25% by volume, with the remainder being substantially all molecular nitrogen, for a time sufficient to inhibit the visible growth of fungi on said fresh leafy and head vegetables, and at a temperature in the range of about 29°F. to about 60°F.

Independent claim 31 differs from claim 27 only in stating the carbon monoxide limitation to be "in an amount of more than 5% to about 25% by volume."

#### Page 1935

The sole reference relied upon by the Board in rejecting the appealed claims is U.S. Patent No. 3,453,119 to McGill (McGill patent) which is directed to a method of storing fresh leafy and head vegetables (such as lettuce) in order to "maintain their fresh appearance ... even over extended periods of time." The disclosure indicates that the method retards "deterioration changes on storage including respiratory deterioration changes, bacterial deterioration changes and other enzymatic deterioration changes." Like Woodruff's method, McGill's method consists of storing the vegetables in a modified atmosphere and at a lower temperature. The following is a comparison of the atmospheres and temperatures claimed in Woodruff's application and those disclosed in McGill (in approximate percent by volume).

Woodruff Woodruff McGill
Claim 27 Claim 31 Patent
0-20% CO2 0-20% CO2 0-5% CO2

1-20% 02	1-20% O2	1-10% 02
3~25% CO	>5-25% CO	1-5% CO
balance N2	balance $N_2$	balance N <sub>2</sub>
29-60° F	29-60° F	32-40° F

As can be seen, except for the carbon monoxide concentration, all of the ranges of gas concentrations and temperature set forth in the McGill patent are completely within those recited in claims 27 and 31. With respect to the CO concentration, there is an overlap between the percentages of the McGill patent and claim 27, while the percentages of the McGill patent and claim 31 are roughly contiguous.

Woodruff presented a number of declarations to the PTO in support of his contention that the claims are not rendered obvious by the McGill patent. A declaration by reference-patentee Dr. John N. McGill states that his patent does not teach that fungi are a problem in leafy and head vegetables. Dr. McGill further states that at the time he was doing the research which formed the basis of the McGill patent, he was concerned only with bacteria control and the prevention of "butt-end discoloration" of lettuce, and made no observations as to the growth or lack of growth of fungi on lettuce. This latter contention is supported by selected pages from Dr. McGill's assistant's laboratory notebook. Dr. McGill's declaration also states that, in his opinion as an expert in the field, "processes that control bacteria and slime in leafy head vegetables do not necessarily control fungi and vice-versa," and that the McGill patent "does not teach or suggest to one of ordinary skill in the relevant art how to control fungi in leafy and head vegetables." Dr. McGill's declaration is corroborated by Dr. John H. Silliker, another expert in the art, and by Mr. James R. Lugg, the president of TransFRESH Corporation. 1

Woodruff also presented the declaration of Mr. Laurence D. Bell, another TransFRESH employee. Mr. Bell conducted tests comparing the fungi-inhibiting qualities of processes within the scope of claims 27 and 31 with the commercial embodiment of McGill's method used by TransFRESH. According to this declaration, TransFRESH employs a method of storing fresh vegetables wherein the initial concentration of carbon monoxide is about 4.5%, but is allowed to diminish significantly over the first few days of storage. The declaration shows that for 7 and 14 day test periods, the methods within the scope of claims 27 and 31 were much better at preventing fungal growth than was the commercial embodiment of McGill's method.

In affirming the rejection of claims 27-34 under 35 U.S.C. §103, the Board focussed on the teaching in the McGill patent of "inhibiting deterioration generally," noting that it was well-known in the art that fungi cause deterioration in leafy vegetables such as lettuce. The Board also relied heavily on a statement in the McGill patent that leafy vegetables may be stored in the disclosed modified atmosphere "for as much as 14 days without substantial loss in appearance," noting that fungal growth would certainly have an adverse impact on the appearance of leafy vegetables. Finally, the Board considered each of the declarations submitted by Woodruff, but concluded that these were insufficient to overcome the rejection.

#### OPINION

[1] At the outset, we note that we review an obviousness determination by the PTO de novo, In re De Blauwe, 736 F.2d 699, 703, 222 USPQ 191, 195 (Fed. Cir. 1984), while

our review of factual findings is under the clearly erroneous standard. *In re Caveney*, 761 F.2d 671, 674, 226 USPQ 1, 3 (Fed. Cir. 1985).

We first look to determine the differences between the claimed invention and the prior

#### Page 1936

art. Claims 27 and 31 are process claims comprising the single step of maintaining vegetables in a specified atmosphere for a specified time (a time sufficient to inhibit the visible growth of fungi).

The atmospheres recited in claims 27 and 31 are anticipated by the atmosphere taught in the McGill patent except for the overlapping or adjacent ranges of carbon monoxide concentration. Woodruff argues, with respect to claim 31, that there is not simply an overlap in ranges, but a difference in ranges, since the McGill patent teaches a maximum CO concentration of 5%, while claim 31 requires a CO concentration of "more than 5%." We agree, however, with the Board that the disclosure in the McGill patent of a carbon monoxide concentration of "about 1-5%" does allow for concentrations slightly above 5%.

The actual time limitation of claims 27 and 31 is also met by McGill's disclosure. Claims 27 and 31 state that the vegetables should be maintained in the modified atmosphere "for a time sufficient to inhibit the visible growth of fungi." According to the examples given in Woodruff's specification, the time required to show whether or not there has been an inhibition of fungi on leafy and head vegetables is on the order of 6-19 days. As the Board found, the McGill patent discloses storing the vegetables in the modified atmosphere for 14 days "without substantial loss in appearance." Thus, the time taught by the McGill patent for storing vegetables in a modified atmosphere is within the range which Woodruff's disclosure indicates is "sufficient to inhibit the visible growth of fungi," or at least demonstrate inhibition.

Woodruff, however, maintains that the above language ("time sufficient to inhibit the visible growth of fungi") is not only a time limitation but is also a *purpose* limitation, i.e., the claim requires that one be intending to inhibit fungal growth when performing the claimed method step. Since, argues Woodruff, the prior art did not recognize the funginhibiting property of Woodruff's method, the prior art could not render obvious a method having the purpose of inhibiting fungal growth.

[2] Judging from the evidence before us, Woodruff may have been the first to recognize the fungal-inhibiting benefit of the method. On the other hand, we do not agree that what Woodruff has allegedly discovered and claimed can be termed a new *purpose* for performing the claimed method. The generic purpose of the method disclosed in McGill is to prevent the *deterioration* of fresh vegetables, which certainly encompasses the specific benefit disclosed by Woodruff. While the McGill patent refers only to the effectiveness of the method against respiratory, bacterial, and enzymatic deterioration, Woodruff's disclosure that the method is *also* effective against fungi relates to but one other known cause of deterioration.

Therefore, there are two differences between the claimed invention and the prior art: one, the slightly different ranges of carbon monoxide concentration used in the modified atmosphere; and two, the newly disclosed *benefit* of inhibiting the growth of fungi. We are of the opinion that these differences do not render the claimed process patentable.

It is a general rule that merely discovering and claiming a new benefit of an old process cannot render the process again patentable. Verdegaal Bros., Inc. v. Union Oil Co. of Calif., 814 F.2d 628, 632-33, 2 USPQ2d 1051, 1054 (Fed. Cir.), cert. denied, 484 U.S. 827 (1987); Bird Provision Co. v. Owens Country Sausage, Inc., 568 F.2d 369, 375, 197 USPQ 134, 139 (5th Cir. 1978). While the processes encompassed by the claims are not entirely old, the rule is applicable here to the extent that the claims and the prior art overlap.

The cases of *In re Shetty*, 566 F.2d 81, 195 USPQ 753 (CCPA 1977) and *In re Marshall*, 578 F.2d 301, 198 USPQ 344 (CCPA 1978) do not, as urged by Woodruff, compel a contrary result. In both of these cases, the applicant had discovered a completely new use for either an old compound (*Marshall*) or an obvious compound (*Shetty*). In the present case, what Woodruff terms a "new use" (preventing fungal growth) is at least generically encompassed by the prior art purpose of preventing the deterioration of leafy and head vegetables.

Nor can patentability be found in the difference in carbon monoxide ranges recited in the claims. The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims. See, e.g., Gardner v. TEC Sys., Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir.), cert. denied, 469 U.S. 830 [ 225 USPQ 232 ] (1984); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980); In re Ornitz, 351 F.2d 1013, 147 USPQ 283 (CCPA 1965); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1955). These cases have consistently held that in such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range. Gardner, 725 F.2d at 1349, 220 USPQ at 786 (obviousness determina

#### Page 1937

tion affirmed because dimensional limitations in claims did not specify a device which performed and operated differently from the prior art); Boesch, 617 F.2d at 276, 205 USPQ at 219; Ornitz, 351 F.2d at 1016-17, 147 USPQ at 286; Aller, 220 F.2d at 456, 105 USPQ at 235. Woodruff has made no such showing in the present case. The only test results presented by Woodruff are the results reported by Mr. Bell, comparing Woodruff's claimed invention to the commercial embodiment of McGill's method. While Woodruff's invention certainly showed superior fungi-inhibiting effect in these tests, the critical comparison is not with the commercial embodiment of McGill's invention, but with the method taught in his patent. According to Mr. Bell's declaration, the carbon monoxide concentration in the test group representing the commercial embodiment of McGill's invention was allowed to drop to 0% after 4 days. The McGill patent does not teach allowing the concentrations of any of the gases to fall out of the suggested ranges.

#### CONCLUSION

In the absence of adequate evidence showing that ranges of carbon monoxide concentration recited in claims 27-34 are critical, the Board correctly affirmed the rejection of the claims under 35 U.S.C. §103. AFFIRMED

#### **Footnotes**

Footnote 1. TransFRESH Corp. is the assignee of both Woodruff's application and of the now-expired McGill patent.

- End of Case -

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